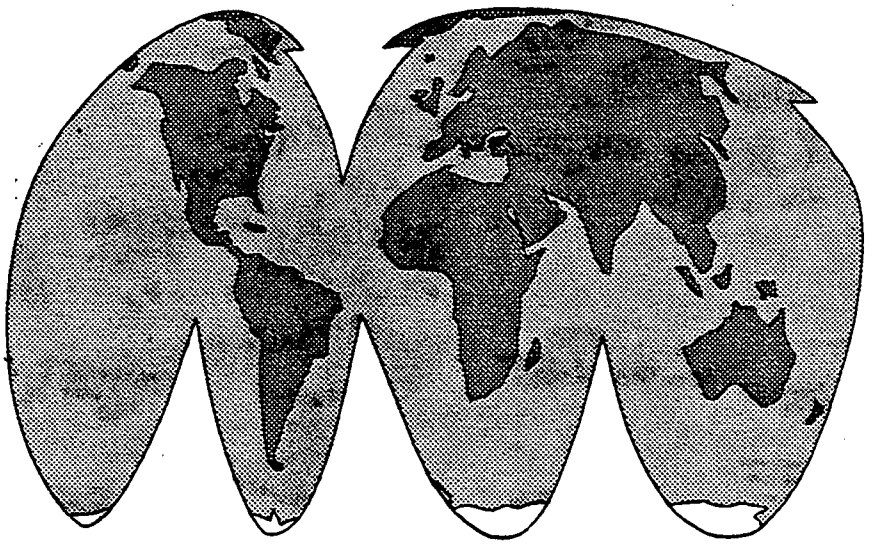
STATEWIDE TRANSPORTATION PLAN



Intermodalism...Bringing Transportation Together

May 1995

EXECUTIVE SUMMARY

Georgia has benefited from a comprehensive multimodal transportation network. The availability of road, air, rail and port transportation facilities has been a magnet for business development and economic activity. The ability to connect goods to markets and people to destinations is a key factor determining the quality of life and creating new opportunities for our State.

But the completion of the Interstate System and the rapid development of a global marketplace have placed new demands on the intermodal network. In response to an era of rapid change and challenge, the Department invited the Transportation 2000 Commission, a group of public and private citizens, to create a new Vision of transportation for Georgia's future. Vision 2000 emphasizes adequate multimodal transportation capacity and safety. The Board of Transportation adopted the Transportation 2000 Vision. This powerful vision recognizes the strategic importance of transportation to Georgia's future.

Findings and recommendations of the Statewide Transportation Plan incorporate the results of planning studies, research and analysis. Guided by Vision 2000, the Plan addresses the transportation network as an integrated multimodal system and identifies a need for modal improvements and new initiatives. The future transportation program, outlined in the Statewide Transportation Plan, promotes modal efficiency, encourages seamless intermodal connectivity and effective use of existing resources maximizing the benefits accruing from the public's investment.

Intermodalism is the interaction of modal operations resulting in more efficient and effective mobility of people and goods. Each transportation mode contributes uniquely to total mobility. Through the interaction of modes working in unison, a higher level of mobility is achieved, superior to what any one mode could offer alone. At the heart of the intermodal transportation system are highways, the backbone for intermodal connections. Through the connectivity provided by roads and bridges, the intermodal network serves a spectrum of travel purposes facilitating public travel, cargo shipments, military preparedness and safety.

The Statewide Transportation Plan recognizes that the benefits from the intermodal transportation system occur if all modes are working efficiently. Creating a balanced transportation network benefits the total mobility of the state and enhances transportation's contribution to economic development and quality of life.

The Statewide Transportation Plan is a long range plan, spanning 20 years. The Plan has identified major issues and challenges that will need attention. Key transportation issues in Georgia over the next 20 years include:

- Preserving Existing Facilities and Protecting the Public Investment
  Optimizing the public returns on investment from the existing transportation infrastructure will require maintaining the existing system and making it more efficient.

- Providing a safe system with adequate capacity
  Safety of the transportation system operations will rely on adequate capacity to address the needs stemming from increasing traffic.

- Encouraging Economic Development Using Transportation as a Tool to Attract New Business and Make Existing Businesses More Competitive.
  The intermodal transportation network must be able to provide the necessary conditions to attract new business, enhance the competitive position of existing businesses and create jobs. Economic growth will be linked to access to the global marketplace and opportunities created by international trade agreements.

- Coordinating The State Transportation Program with the Other State and Federal Programs
  Transportation is important to achieving State and national economic development, environmental programs and quality of life objectives. Coordination of federal, state and local resources is necessary to maximizing the return on the public investment, and developing a transportation system responsive to future challenges.

- Giving Environmental Concerns Consideration in Transportation Programs
  The transportation program can be a major factor contributing to environmental quality. Clean Air Act Amendments of 1990, Clean Water Act and other federal and state environmental laws and regulations are serious considerations in planning and developing transportation projects.

- Assuring Adequate Funding for Transportation Programs
  Transportation initiatives needed to preserve the mobility of the next generation must have adequate financing that preserves the user fee principle and incorporates new and innovative sources including public private partnering.

- Assuring Mobility Equity
  The transportation program will need to provide for the needs of individuals without mobility options. In the future, aged and impaired populations may become increasingly dependent on public transportation to supply mobility.

- Ensuring The Transportation Program Is Accountable to the Public
  The public is interested in transportation programs and transportation initiatives and effects of the transportation programs on the economy, environmental quality of life, safety and other issues of concern. Public involvement and pubic information will continue to be key factors in shaping the state's transportation program.

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INTRODUCTION

The Statewide Transportation Plan (SWTP) is a policy document, intended to identify programs and strategies that result in accomplishing a new Vision for transportation in Georgia. The Vision was developed through a public outreach effort called Transportation 2000. Transportation 2000 Commission included public and private sector participants, who worked over a period of eight months to craft a Vision to guide the State's transportation program into the 21st Century. In their deliberations, the Transportation 2000 Commission consulted with the people of Georgia and with many experts in the field of transportation. The Statewide Transportation Plan reflects the findings of the Transportation 2000 Commission and its Vision of transportation.

Georgia's Transportation 2000 Vision states:

> "The people of Georgia value a multi-modal transportation system that both recognizes and balances the unique needs of Georgia's diverse geographic regions, and one that supports sustainable economic development and preserves our investments in natural and built environments. They desire a transportation system that meets our personal and business transportation needs, enhances our quality of life, and provides affordable choices for safe, efficient and convenient interconnection of people, goods and services. They also value full participation in planning, financing, implementing and evaluating programs that ensure a physically and economically accessible transportation system for all Georgians."

The Vision for Georgia's transportation program recognizes the vital role of transportation in facilitating the economic and social well being of the public. To be successful Georgia's transportation must be fully integrated and provide mobility choices offering flexibility and convenience to users. It should be an effective tool supporting the State's economic development strategies and social objectives. Transportation 2000 recognizes the value of diversity in the State's unique geographic areas. The transportation program needs to reflect the individual needs of local areas and involve the public in the development, implementation and evaluation of the transportation program.

In keeping with the Vision, the Department sought assistance in developing the SWTP from an Advisory Committee made up of public and private sector groups; many had been members of the Transportation 2000 Commission. Public involvement included workshops held at twelve locations statewide, an interactive teleconference public hearing and comments and recommendations from the public.

Development of the SWTP involved extensive technical analysis of transportation trends, evaluation of current conditions and potential options. Results are reflected in the final recommendations. At the same time the Statewide Transportation Plan was being developed, Georgia's eleven urbanized areas were working on long range plans. Each of the urbanized areas prepared a profile of major issues in their area for inclusion into the SWTP.

Likewise, six Management Systems (computerized information databases mandated by the Intermodal Surface Transportation Efficiency Act) are in development and not complete. The Management System results will be incorporated into the Statewide Transportation Plan at a later date. The Management Systems for public transportation facilities and equipment, intermodal transportation facilities and systems, highway safety, highway pavement, bridges and traffic congestion are currently being developed. The results of the Management Systems will influence transportation program priorities set in the SWTP. Until these elements are completed, the SWTP will stand as an interim document.

The SWTP includes programs and strategies that support development of an intermodal transportation system in harmony with the Vision developed by Transportation 2000. It outlines strategies for a balanced intermodal transportation system building on the excellent system currently in place.

Modal Synergy

Analysis of current and future conditions of the state's transportation network anticipates dramatic growth in demand for mobility services. Increased demand signals a need to emphasize intermodal connections and address our ability to finance transportation programs.

Each transportation mode contributes uniquely to the complicated and interrelated requirements of a modern global society dependent on communications and transportation for personal and business activities. Some transportation modes can move heavy bulk goods long distances cheaply; others provide timely door to door service; and still others are known for speed of delivery. Increasingly, passenger and freight movements use a combination of mobility services to meet specialized travel demands. The seamless interaction of modes, working in unison, is critical to mobility and accessibility.

Seamless transportation, so often mentioned as the goal of intermodalism, is modal synergy. Modal synergy may be defined as:

> ...the cooperative action of individual modes such that the total effect is greater than the sum of the effects taken independently.

The State's objective is to establish a transportation environment in which modal synergy happens. Modes working together, make a unique contribution to the transportation equation, and provide a transportation service that is more efficient and effective than what any one could offer. Recognizing the need for modal synergy assumes seamless, effective transportation made up of modes linked and working interdependently. Quality transportation happens when modes are operating in harmony and cooperatively.

The backbone of the intermodal system is highways and bridges. Highways and bridges are the connectors of intermodal transportation providing linkage between trucks and rails, between ship containers and airports, between cars and public transportation, and others. The Statewide Transportation Plan recognizes the importance of enhancing modal synergy through programs that encourage balanced transportation.

The State's transportation program, in keeping with the Vision of Transportation 2000, aims to create a total transportation program for Georgia's future. The transportation work agenda balances preservation and enhancement of the highway and bridge network, with aggressive support for other modes of transportation. Support for public transportation, passenger rail, aviation and ports is important to

making these a viable part of the transportation equation. Achieving an intermodal transportation system will require aggressively pursuing new initiatives, as well as preserving and expanding where necessary, the existing system.

National and State policies recognize the importance of intermodal transportation to economic development and to achieving social goals. The results of Transportation 2000 echoed the same view; Georgians expect the transportation program to be a major contributor to creating a climate in which sustainable economic development occurs. During Transportation 2000, the people of Georgia expressed a desire for an intermodal transportation system and full participation in planning, financing, implementing and evaluating transportation programs. The SWTP reflects the participation of many Georgians and incorporates the concerns and comments of citizens statewide.

TRENDS IN TRANSPORTATION:

TRANSPORTATION AND THE GEORGIA ECONOMY

Transportation has always been important to Georgia's economic development -- from the initial growth of the Georgia colony at the seaport of Savannah to the creation of the railroad, highway, and air transportation nodes at Atlanta, to the development of the State's Interstate Highway system. In fact, the relative improvement in Georgia's transportation resources has been one of the most important factors in the State's rapid economic growth of recent years.

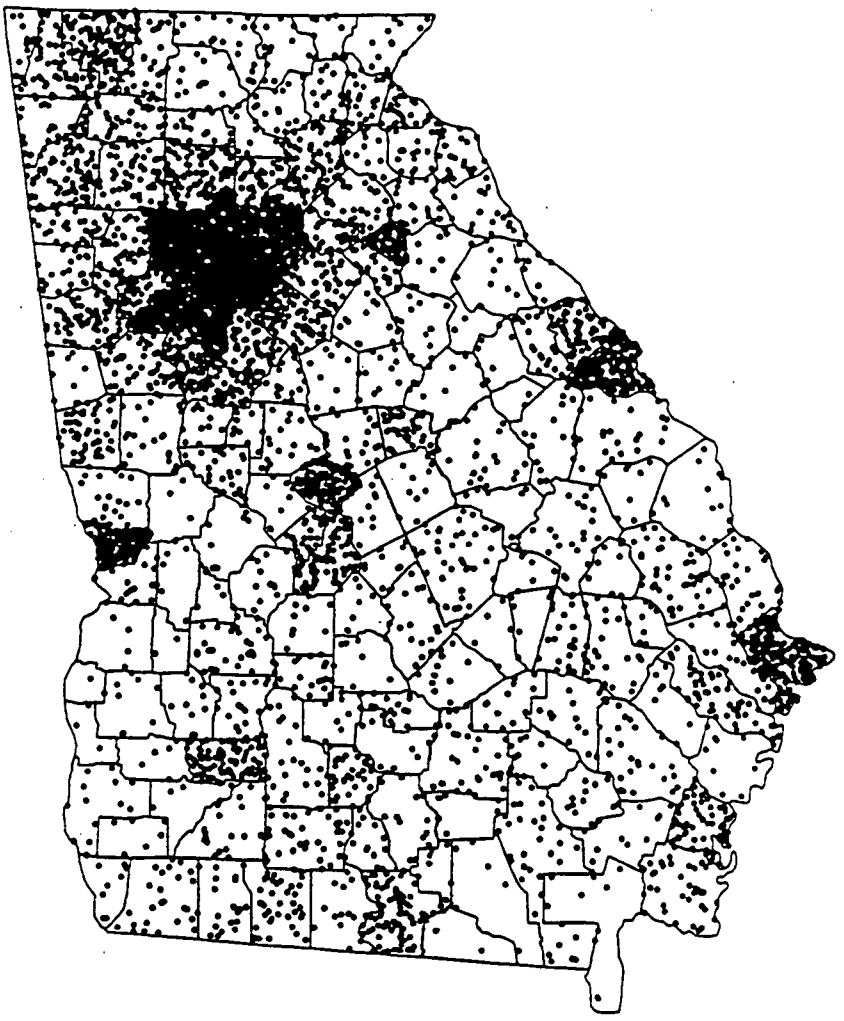
The Demand For Transportation Services

The demand for increased transportation services in Georgia arises from two fundamental economic trends: (1) coping with and providing for projected employment and population gains in the State's rapidly growing areas, particularly the Atlanta metropolitan region, and (2) providing improved transportation services to help lagging regions become more competitive locations attracting economic development. The Georgia economy is complex and diverse. As shown in the following maps, the State's population and income are heavily concentrated in a few urban areas, and particularly in the Atlanta region (see Map 1, page B-2). The State's past and projected future economic development has been heavily concentrated in these same urban areas, while the economies of large regions of the State are lagging or declining.

Personal Income

The best single measure of an area's economic well-being is generally considered per capita income, that is, total personal income divided by population. The data in the following map show that in 1991 only seven counties, all in the Atlanta region, had per capita incomes greater than the national average, while only seven others had per capita incomes greater than the state average (see Map 2, page B-3). The other 145 counties were below the State average, ranging down to as low as 46.7 percent of average incomes for the United States as a whole.

POPULATION 1992
GEORGIA COUNTIES

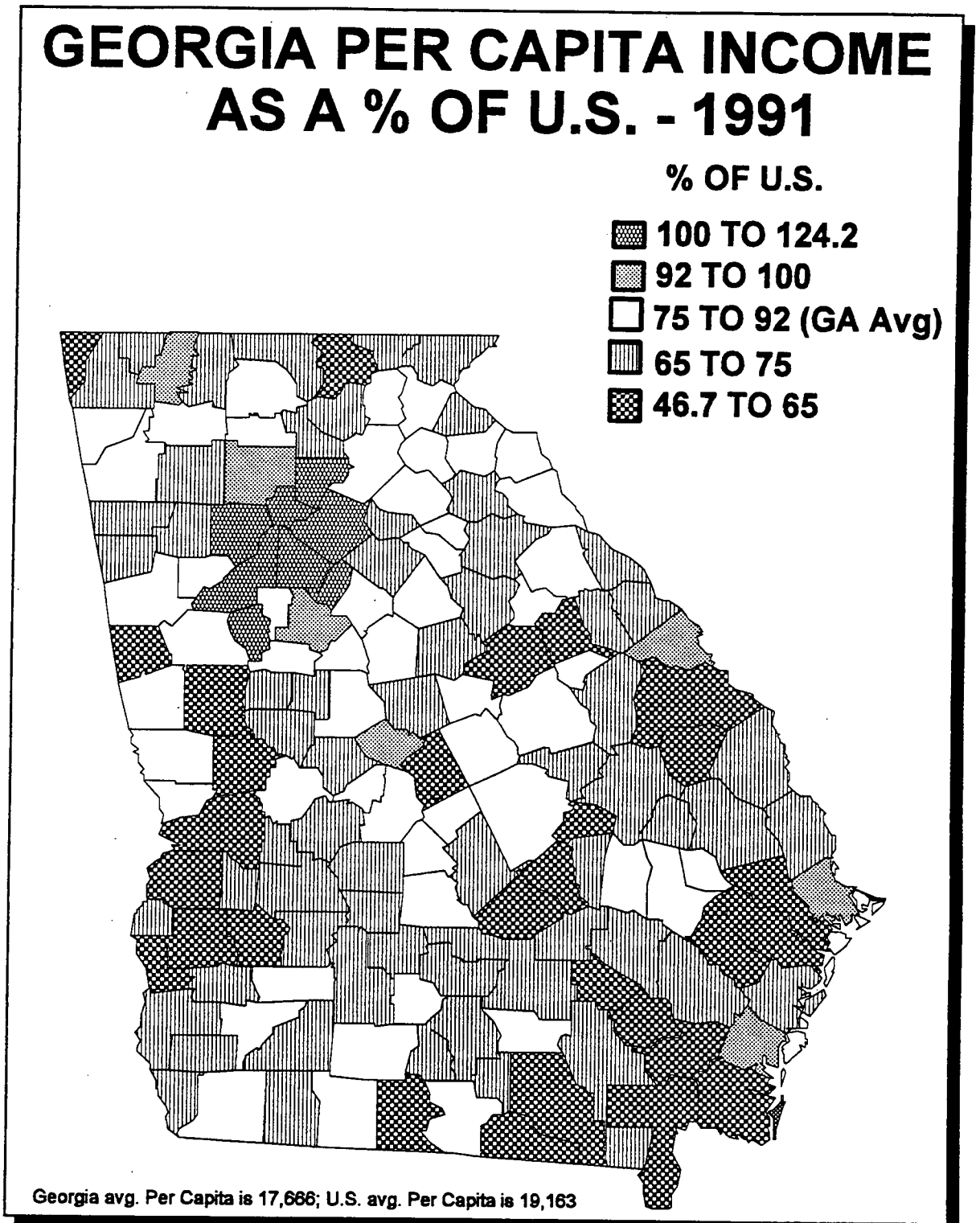


One Dot = 1,000

Map 1

Source: Office of Planning and Budget

GEORGIA PER CAPITA INCOME AS A % OF U.S. - 1991



Map 2

Source: Office of Planning and Budget

Population

The personal and family decision of where to live is influenced by many factors, but economic opportunity is perhaps the central one. An area's relative level of employment and other economic opportunity is reflected in its population change. For Georgia, as in other southern states, the decline in agricultural employment that began in the 1920's resulted in declining populations in counties that depended heavily on that sector. While some of these areas made the transition to a non-agricultural economy, many did not have the economic advantages to allow them to be competitive in attracting employment in other industries. Thus, the population map (Map 3, page B-5) shows that eighty-three of Georgia's counties suffered population losses for the six-decade long period of 1930-1992. This decline has continued in recent years, with 39 counties experiencing population declines between 1980 and 1992[1].

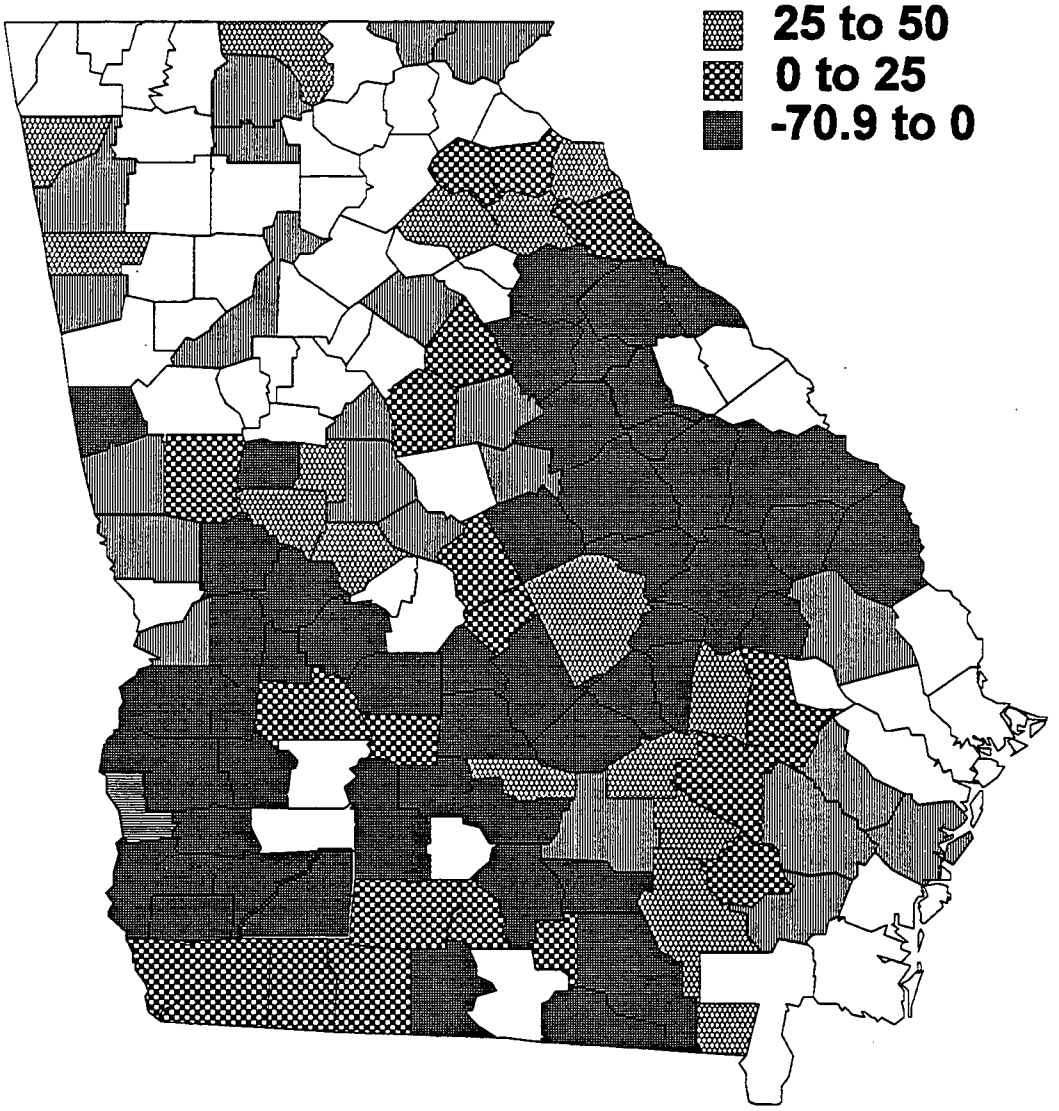
In contrast, many coastal and north Georgia counties experienced population increases of greater than 100 percent between 1930 and 1992, with the populations of some Atlanta regional counties growing even more rapidly. These trends continued in the most recent decade, the State's population growth being concentrated in these same areas.

Projected Population Growth

The projection of future employment and population change is a challenging undertaking, particularly for small areas where the establishment of even one firm or military base or its closing can have a relatively large economic impact. Understanding these limitations, population projections by county for the year 2010 prepared by the Bureau of Planning and Budget are presented in the next two figures (Maps 4 and 5, pages B-6 And B-7). These maps clearly show the overwhelming percentage of the State's expected population growth during this projection period will occur in the Atlanta metropolitan region, concentrated in the suburban counties.

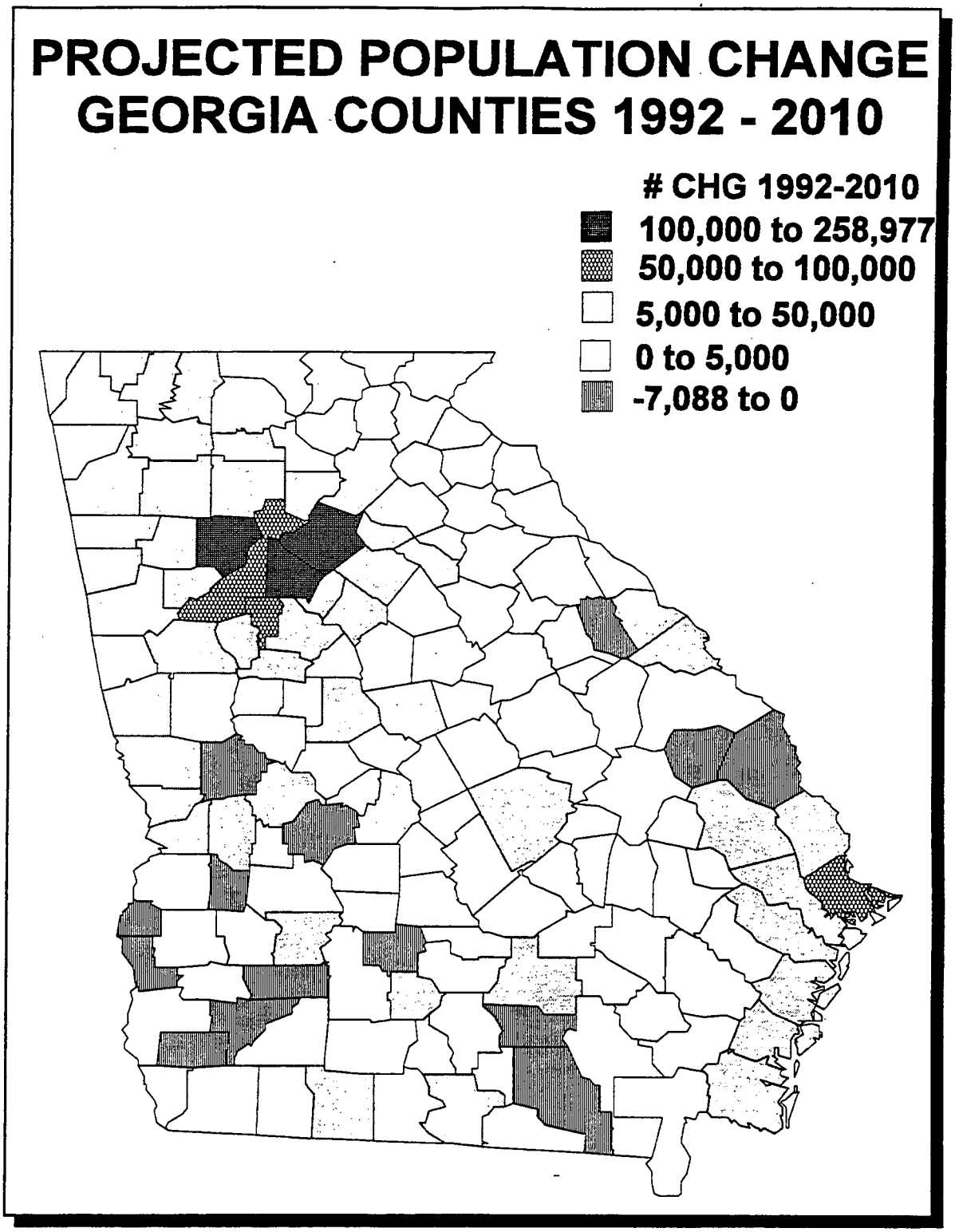
[1]Office of Planning and Budget, 1992.

POPULATION CHANGE GEORGIA COUNTIES 1930 - 1992



Map 3

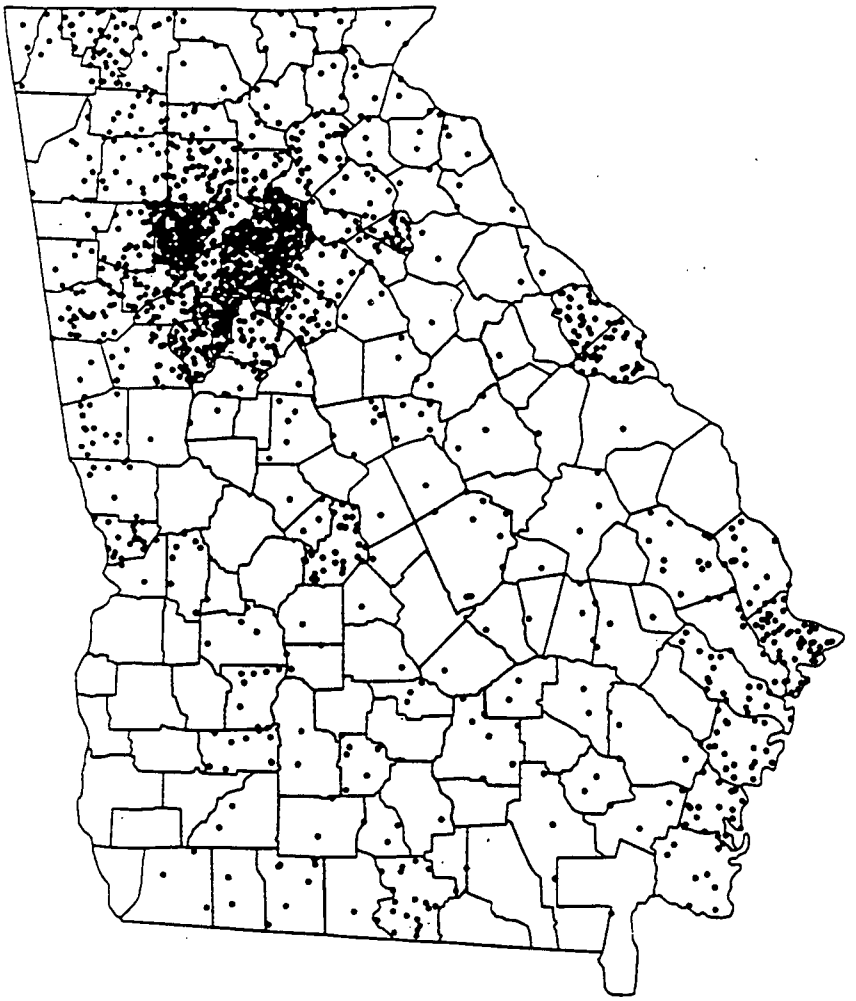
Source: Office of Planning and Budget



Map 4

Source: Office of Planning and Budget

PROJECTED POPULATION CHANGE 1992 - 2010 COUNTIES EXPECTING GROWTH



Map 5

Source: Office of Planning and Budget

Economic Development and Transportation Needs

These projections lead back to the basic economic growth factors creating a need for transportation improvements: (1) coping with and providing for projected employment and population gains in the State's rapidly growing areas, particularly the Atlanta metropolitan region, and (2) providing improved transportation services to help lagging regions to become more competitive locations in attracting economic development.

Providing for Rapid Economic Development

The large projected population increases in the Atlanta region will in turn create a large additional demand for transportation services. The use of other modes must be encouraged, and more efficient use must be made of existing roadways.

Nationally, the number of vehicles per household or per licensed driver has increased during the past decades. The Nation Personal Transportation Survey found that the number of vehicles per household increased from 1.16 in 1969 to 1.77 in 1990; the number of vehicles per licensed driver increased from 0.70 in 1969 to 1.01 in 1990. The Survey also found that automobiles and household-based trucks were used for 91.4 percent of work trips in 1990, up slightly from 90.8 percent in 1969. The percentage of work trips made by public transit declined from 8.4 percent to 5.5 percent during the period. Overall, the annual personal trips made by auto, van, and household-based trucks increased by 64 percent between 1969 and 1990, and accounted for 94.4 percent of all trips. The number of trips made on public transit remained essentially flat, growing by only 0.2 percent. Public transit accounted for only 2.2 percent of all trips in 1990, down from 3.4 percent in 1969.

The 1990 ratio of vehicles to population in Georgia was 0.865. This ratio was higher for the wealthier metropolitan suburban counties, reaching over one vehicle per person in some areas. As expected, it was lower in the low-income counties and in heavily urbanized ones such as Fulton.

Exactly what will happen to this ratio in the future is difficult to forecast. Perhaps improvements in public transportation will reverse the existing trend. For estimating

the impact of projected population change on demand for transportation improvements, however, one must assume the same ratio of vehicles to population in 2010 as existed in 1990. Using this assumption, projected registered vehicles by county for 2010 are presented in the Table 1 below:

AREA	Vehicles/ Population	1990 Vehicles (1,000s)	2010 Vehicles (1,000s)	Absolute Change	Percent Change
Georgia	0.87	5,602.0	7,331.3	1,729.3	30.90%
Atlanta	0.86	2,314.6	3,515.0	1,200.4	52.00%
Albany	0.77	86.5	102.3	15.8	18.30%
Athens	0.79	99.8	131.0	31.2	31.30%
Augusta	0.82	225.2	289.8	64.6	28.70%
Brunswick	0.87	54.7	70.0	15.3	28.00%
Columbus	0.73	157.0	183.8	26.9	17.10%
Macon-W. Robins	0.85	246.5	291.0	44.5	18.10%
Savannah	0.81	210.3	277.1	66.8	31.80%
Rome	0.91	73.7	82.4	8.8	11.90%

Table 1 Source: Office of Planning and Budget

The projections suggest that in 2010 there will be approximately 1.2 million additional registered vehicles in the Atlanta metropolitan area, an increase of 52.0 percent.

Even if the ratio of vehicles to population reverses the trend of past decades and declines during the projection period, this increase in the number of vehicles will create a tremendous demand for additional transportation services. While it may be possible to shift some of this demand to other modes, there still remains a large increased demand for highways.

Increasing Competitive Advantages in Lagging Areas

Adequate transportation is only one factor that can make an area competitive in attracting additional employment and economic development in general, but it is a critical one. The designation of the Governor's Road Improvement Program is designed to help improve competitive advantages throughout the State. Completion of this system at an early date is a necessity for the economic development of Georgia's lagging regions.

General Traffic Growth

Besides these specific needs for increased transportation services, the State's transportation system will cope with general increases in traffic flow. For example, the American Trucking Association estimates that truck traffic in the United States will increase by 2.8 percent annually during the study period. Georgia's economy has been growing more rapidly than the national average, and this trend will likely continue. If this trend continues, truck traffic on the State's roads will probably increase about 4 percent annually, resulting in doubling the number of truck miles over a twenty-year period.

An Analysis of Transportation Trends Affecting the Georgia Economy

The past twenty years have been ones of sweeping change in the commercial transportation industries. Many of these changes have come because of governmental deregulation, but others have been the result of basic economic forces. Analysis of these changes helps give insight into future transportation trends that will affect the Georgia economy and the demand for transportation services.

Fundamental Changes in Transportation

Recent years have witnessed many fundamental changes in the way goods are moved in the United States and Georgia:

1. Deregulation of transportation

   All modes of transportation experienced significant reductions in governmental regulation during the 1980's. These reductions have resulted in increased competition and large increases in the efficiency of goods movements. For example, transport spending as a percentage of Gross

National Product declined from about 20 percent in 1980 to less than 17 percent in 1992.

2. Transition to global markets

The United States economy, and, indeed, most of the world's economies, has become more open to foreign trade. Not only has expansion of the global marketplace greatly increased export opportunities, it has also changed the ways goods are moved. Export markets are becoming more important to United States producers, increasing over 20 percent annually in recent years and now account for about 25 percent of total goods production. The NAFTA (North American Free Trade Agreement) and the GATT (General Agreement on Tariffs and Trade) treaties will have the effect of accelerating the growth of international markets, but they will also expose Georgia industries to increased competition from foreign producers. This increases the urgency to provide improved transportation access to competitive areas of the State.

The increased international shipments have been a major factor in the growth of intermodal rail transportation, air freight, and shipments through port facilities. Insuring that Georgia ports are competitive is critical for the future growth of the Georgia economy.

3. Transition from inventory accumulation to just-in-time inventory control and logistics management

Producers in all types of industries, but particularly manufacturing, have moved away from large truck-load or car-load shipments to smaller and more frequent shipments to satisfy just-in-time inventory control strategies that lower inventory costs. Companies are also moving to logistics management systems to reduce inventories and order times. For example, a company might order relatively small amounts more frequently, and use a carrier that delivers more quickly, to reduce warehousing and inventory costs.

4. Transition from bulk, high density cargo to relatively light, high-cubic capacity shipments

   The economy's transition away from emphasis on manufacturing to more of an emphasis on financial and service oriented base has also led to rapid growth in relatively light, smaller shipments. This has been an important factor in the growth of the trucking industry.

5. Increase in partnerships among modes

   There is increasing cooperation among different transportation modes, particularly between the trucking and railroad industries. In part, this has been a product of deregulation that made such partnerships possible, but it can also be attributed to the recognition that partnerships offer substantial increases in efficiency and corresponding decreases in costs. The result is a more seamless freight transportation system.

The Trucking Industry

The trucking industry has been a prime beneficiary of the development of the Interstate system and other highway improvements during the post World War II period. These developments helped reduce the industry's relative costs compared to other modes during this fifty year period. This enabled the trucking industry to capture a large share of intercity freight, particularly of the higher value shipments. In 1991, 78 percent of the Nation's freight transport bill went to trucks, although the industry accounted for slightly less than 25 percent of total ton-miles.

The trucking industry has also enjoyed technological improvements that have increased fuel efficiency, and, in general, have reduced costs. They have also benefited from increases in the allowable size and weight of trucks, which resulted in further cost savings.

As noted earlier, fundamental shifts in the economy have also worked to the benefit of the trucking industry. The movement to smaller shipments and the just-in-time requirements favored the industry because of trucking's flexibility.

Deregulation has brought tremendous change to the trucking industry. Freed of previous restraints, new firms with innovative practices have gained large shares of the market. As will be detailed below, deregulation has also been a critical factor in the development of the intermodal freight industry.

The Railroad Freight Industry

The railroads have been dramatically transformed since the passage of the 1980 Staggers Rail Act, which removed much of the burdensome regulation dating back to the railroads' near absolute monopoly days in 1887. Since deregulation, the railroads have become vastly more efficient. Between 1981 and 1992 they increased their revenue ton miles of freight from 910 billion to 1,067 billion while reducing the number of employees from 436 thousand to 197 thousand. They also abandoned uneconomical lines, including several in Georgia. National miles of track fell from 268 thousand in 1981 to 191 thousand in 1992. Their percentage of intercity freight ton-miles, which had been falling since World War II, stabilized at around 37 percent of the total by 1992.

Intermodal Transportation

Intermodal freight, defined as the coordinated transport of goods in containers or trailers by a combination of truck and rail, with or without an oceangoing link, has experienced growth during the past twenty years. Intermodal traffic has grown at a 6.6 percent annual rate since 1975, and it is expected to grow at the same or at a greater rate throughout the 1990's.

The development and future expansion of the intermodal industry advances many national transportation objectives. The first is relief from highway congestion, since each double-stack intermodal train removes an average of 200 trucks from the highways. Second, in long haul markets, intermodal transportation offers cost savings of over 25 percent, and improved technology may increase these savings. Third, intermodal rail offers fuel efficiency, lower emissions and reduced highway deterioration, particularly for pavements.

In 1991, intermodal freight accounted for approximately 20 percent of railroad revenue, and the percentage is increasing. Most of the growth has not come from

diversion of trucks to rail, however, but from the shifting of rail carload traffic to containers. For example, between 1986 and 1990 intermodal's share of intercity freight movements over 500 miles increased from 17.0 percent to 21.4 percent. At the same time, however, rail carloads' share dropped from 28.3 percent to 25.0 percent. The trucking industry's share remained essentially stable, falling from 54.7 percent to 53.6 percent.

The longer the haul and the higher the corridor density, the greater the economic feasibility of intermodal freight operations. Double-stack service, that is, trains that carry stacked containers, grew tremendously during the past decade, and now accounts for two/thirds of all intermodal rail movements. It is estimated that intermodal has captured about an 80 percent market share in these double-stack corridors with hauls of over 1,200 miles.

On the other hand intermodal's share of the less than 750 mile haul is small. Drayage, that is, the truck hauls at either end of the trip, accounts for about 40 percent of costs. Success in capturing significant market share in the 500 to 1,200 mile segment depends upon the railroads' ability to reduce these drayage costs.

Changes in Technology and Practice

The railroads are attempting to develop the technology to enable them to reduce the drayage and interchange costs to make intermodal more feasible for shorter hauls. The two most promising are RoadRailer and the Iron Highway.

The RoadRailer combines the chassis (frame and wheels) with the trailer, eliminating the need for a separate rail car. Assembling a train does not require extensive terminal facilities, only a gravel surface and a yard tractor to position the units, making multimodal feasible for lower volume corridors and shorter hauls. The Norfolk Southern has already placed the RoadRailer in service.

The Iron Highway is an intermodal flatcar still in the test stage. It consists of 1,200 foot units with power and control units separated by an articulated continuous platform. Trucks can drive off and on the platform on wheels without the aid of loading equipment. Trains consist of several of these units. CSX Railroad, which

is developing the Iron Highway, hopes it will reduce the break-even distance for line-haul multimodal to 250-350 miles.

A recent development, and one that holds great promise for the future, is the close coordination between several large truck companies and railroad companies to move long-distance trucks cargoes by rail. The trucking companies have difficulty recruiting and retaining long-distance drivers, a factor that adds to intermodal advantages. Some trucking companies are even converting their equipment to containers instead of the usual truck trailers to simplify the intermodal transfer. As highway congestion increases, this move to intermodal should gain momentum.

The Growth of Intermodal in Georgia

Both the CSX and Norfolk Southern railroads developed intermodal yards in Atlanta during the 1980's on sites of former rail yards. Expansion of intermodal has increased operations in these yards above their rated capacity, and the development of new yards outside I-285 will almost certainly occur in the future. Facilitating easy highway access to these new yards will help make the intermodal connection more efficient.

Commercial Air Cargo Transportation

The past two decades have witnessed dramatic changes in both the passenger and freight components of commercial air transportation, largely because of deregulation. Passenger operations are covered elsewhere in this report.

Before the deregulation of the air cargo industry in 1977, many airlines operated fleets of all-cargo freighters. Air freight forwarders such as Airborne, Emery, and UPS marketed, assembled and consolidated air cargo, and provided pickup and delivery service, but they contracted with the airlines for the actual air movement.

Dramatic change came with deregulation. The freight forwarders became integrated air express companies, acquiring their own fleets of dedicated all-cargo freighters. Today, the all-cargo/express industry's fleets comprise over three/fourths of the total cargo jet lift capacity, and the industry provides overnight express package service to almost every zip code in the country. This air express access has been a major

factor in making smaller communities and rural areas more competitive for economic growth.

Although they are no longer a major factor in the small package express market, the passenger airlines still dominate the airport-to-airport movement of large air freight shipments. In 1994, Delta Air Lines carried 36% of Atlanta's air freight. Federal Express and UPS, the largest all cargo carriers in Atlanta, combined accounted for 33% of the freight business. Nationwide approximately 60 percent of all air cargo is carried as belly cargo on scheduled passenger airliners.

The Potential for All-cargo Airports

The integrated air express companies have established hubs at fewer congested airports. For example, Federal Express has a hub at Memphis, United Parcel Service at Louisville, Kentucky, and Airborne Express at Wilmington, Ohio. Every one of these hubs is located in the Ohio valley in the Central Time Zone, and this central location and time zone appears to be a favorable factor in these operations.

The success of the integrated, small-package express carriers has led to the idea of the more generalized all-cargo airport to relieve congestion at major airports such as Atlanta. As a recent Federal Aviation Agency study[2] concluded that although several all-cargo airports have been developed, there is no successful model at this time. Few all-cargo operators have located at these airports, and none of the all-cargo airports have reduced congestion and delay by attracting cargo operations from nearby air carrier airports.

A large portion of air cargo is carried in the bellies of passenger planes, all-cargo operations are not easily separated from passenger operations. Separation of all-cargo from belly cargo would require air freight operators to maintain facilities at both types of facilities, a large expense. Furthermore, since most all-cargo flights operate at night when passenger operations are at their lowest point, the cargo operations do not add to airport congestion, but rather add to airport revenues and

[2]Federal Aviation Administration, A feasibility Study of Regional Air-Cargo Airports: Including A Case Study of a Regional Air-Cargo Center for the Washington, D.C. Area, August, 1991.

efficiency. The FAA study concluded that to try to separate cargo from passenger operations would be "difficult and inefficient."

Some communities have attempted to develop all-cargo airports that would serve as locations for industry development that would be closely tied to air shipments. Most of these, for example, the former Pease Air Force Base in New Hampshire, and Stewart Air Force Base in New York, are former military bases that already had in place an extensive infrastructure. North Carolina is currently developing a "Transport" at a former air force base in the eastern part of the state.

Implications for the Future

The fundamental trends discussed above have important implications for Georgia's transportation system in the future:

1. Increase in the global marketplace

   Enactment of NAFTA and GATT will accelerate the growth in the global market thereby increase the need to improve the flow of goods to international markets.

2. Increased emphasis on logistics costs

   The trend toward smaller, just-in-time and time-definite shipments will continue, aided by the movement toward emphasis on total logistics costs.

3. Increased partnership among modes

   The growth in the global economy, technological improvements, and the need for increased efficiency, and growing highway congestion will lead to increased partnership among modes.

The above factors will increase the need for an efficient intermodal transportation system and contribute to the continued vitality of the Georgia economy. Georgia's transportation system depends on a strong and adequate highway system. Almost every freight movement in Georgia must use the road network at some point, even when part of the trip is made by other modes.

BACKGROUND:

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) changed the nation's transportation program. For the past five decades, a main objective has been development of the Interstate system to serve the needs of commerce and defense. ISTEA declared the Interstate system complete. Furthermore, it announced a new national policy to guide transportation, targeting the use of federal funds to develop an interactive, coordinated intermodal transportation network. Since 1956, when the Interstate System was authorized, there had not been such a substantial redefinition of the national transportation program goals and objectives.

The Interstate network is a national asset. This highway system has not only served the needs of commerce and defense, as originally intended, but it has been the means of establishing a higher standard of living for our citizens. Building on the accomplishments of the transportation program, Congress passed ISTEA with the intent of implementing a strategy to link transportation with national economic, environmental and energy objectives.

National transportation policy aims to:

> ".....develop a National Intermodal Transportation System that is economically efficient, environmentally sound, provides the foundation for the nation to compete in the global economy, and will move people and goods in an energy efficient manner."
>
> Intermodal Surface Transportation Efficiency Act of 1991, Public Law 102-240.

Congress made provision for accomplishing the new national transportation policy; ISTEA requires states to develop a long range Statewide Transportation Plan. Georgia's Plan is a policy document, identifying programs and strategies for our state's transportation future.

For the Statewide Transportation Plan to reflect changing conditions and needs, a vision of transportation was needed. The vision would build on past successes and

identify new directions for the future. GDOT Commissioner Wayne Shackelford and the State Transportation Board initiated Transportation 2000: the Vision Mission to define a vision for the State's transportation program. They invited participation from a broad cross section of citizens, including development, financial and contractor businesses; highway, airport, rail, bicycle and transit operators, local and state government; and environmental, conservation and public interest groups.

Transportation 2000: The Vision Mission

This broad coalition brought together different interests, concerns and expectations important to reflecting diversity and building consensus for future transportation directions. In addition, the direct involvement of Georgia's citizens was sought at fifteen Regional Public Forums held statewide. Comments were transcribed for the record and meeting summaries were made available to anyone interested. The Transportation 2000 Commission used this input in shaping a vision for Georgia's transportation future.

Public comments incorporated into Transportation 2000 Vision include the following:

General Comments

- Preserve the unique character of small cities and rural areas through modal development
- Work with other state agencies to achieve State goals
- Transportation program should be more responsive to local planning
- Transportation needs to be sensitive to the environment, both natural and historic - water, air, land and animal systems
- Encourage public / private partnering
- Identify new methods to finance transportation
- Provide for early and continuous public involvement in the transportation process
- Provide feedback to the public on the status of the transportation program

Economic Comments

- Transportation should promote sustainable economic development
- Transportation funding should place priority on spending for economic growth
- Accelerate completion of the Governor's Road Improvement Program

System Operation Comments

- Consider safety a priority in transportation operations
- Comply with the Americans with Disabilities Act
- Improve the quality of transportation for people with disabilities and the underserved
- Optimize the use of public and private transportation services

Intermodal Comments

- Transportation funding should be balanced among modes
- Institute rail passenger service - commuter and intercity
- Improve rail branchline services supporting the rural economies
- Enhance the competitive position of Georgia Ports
- Expand the role of aviation to improve airport facilities and encourage development of aviation service to provide rural regional mobility
- Encourage use of alternatives means of travel - public transit, telecommuting, ridesharing
- Integrate bicycle and pedestrian facilities into future projects

The comments of the public were summarized in the Transportation 2000 Vision and adopted by the State's Board of Transportation (see page A-1). A central focus of the Statewide Transportation Plan is to develop a strategy designed to accomplish the Vision.

Other State Programs Influencing the SWTP

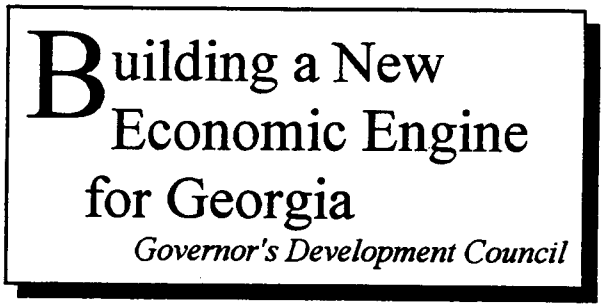
State programs aimed at economic development have influenced the direction of Georgia's transportation program. State leaders are aware of transportation's pivotal role in economic development, environmental quality and quality of life. This awareness led to the establishment of the Governor's Development Council and the Governor's Growth Strategies Commission.

The Governor's Development Council

The Governor's Development Council is a public-private partnership comprised of nine private and six public sector members. It was charged by the Governor with responsibility to prepare a blueprint for Georgia's development efforts, fostering teamwork and building coalitions crossing traditional boundaries of public agencies and institutions, and private sector organizations.

The Governor's Development Council held eleven regional meetings to consult with the public and gather information on business strengths, barriers to development, and areas of opportunity. As a result, the Council's strategies for statewide economic development are tailored to take advantage of the unique character of Georgia's regions. The strategies emphasize the importance of business-government partnerships, education and an aggressive state role to developing opportunities for participation in the global marketplace.

The Council identified four goals in its program called "Building a New Economic Engine" for Georgia:



- GOAL I: Create a Comprehensive State-of-the-Art Economic Development Program
- GOAL II: Focus our Resources on Economic Development in Georgia
- GOAL III: Promote Cooperation Across Government Lines to Maintain a Positive Climate for Economic Development

- GOAL IV: Tie Together Economic Development and Education From Kindergarten through Graduate School

Taken together, these goals represent a master plan for continuing Georgia's economic development into the future. Implementation of the Council's goals rely on linking transportation improvements to economic development.

Council strategies for transportation include:

- "Explore the possibility of creating an export trading company with offices in the Georgia State Ports Authority and Hartsfield International Airport."
- "Enhance the competitiveness of other MSA[3] economies by continuing the developmental highway program, strengthening the secondary airports, creating information hubs in these MSAs and bolstering their special strengths."
- "Tie the rural and small town areas to metro hubs where possible by four lane highways and telecommunications systems. Distance learning and telemedicine initiatives should remain a key part of the rural development strategy."

Other Council strategies also require transportation resources and services for implementation. For instance, development of tourist industry, access to schools and other initiatives rely heavily on transportation. Transportation is both a primary strategy and a support factor for economic development in the Governor's Development Council program.

Governor's Growth Strategies Commission

The Governor's Growth Strategies Commission was appointed in 1987 to develop a blueprint for Georgia's economic future and its quality of life. Growth Strategies recommendations target local initiatives as building blocks for expanding private sector investment in the economy and taking advantage of unique regional

[3] Note: MSA is Metropolitan Statistical Area, a term commonly used to identify urbanized areas with population of 50,000 or more.

opportunities offered by different geographic areas. The Commission chose to call this effort "Quality Growth Partnership."

Nine strategies were identified for achieving Quality Growth Partnership goals to upgrade the quality of life statewide. Transportation was again a key element; funding of four-lane highway networks and protection of rail corridors is considered paramount. In addition, the Commission encouraged the use of all forms of transportation "in order to remain competitive in the rapidly growing international marketplace." Similar to the Governor's Development Council, the Quality Growth Partnership program recognizes aviation and the state's ocean ports as an important element of a growth strategy for Georgia.

The work of the Growth Strategies Commission is currently underway; Local Area Plans are being developed as building blocks for Regional Growth Plans. These in turn will be the underpinnings for a comprehensive State Growth Plan. Once completed, the State Growth Plan will provide guidance for balanced growth for Georgia.

Georgia Department of Transportation Studies

The Department of Transportation initiated three studies which could impact future transportation options:

The Georgia Statewide Aviation System Plan

The Georgia Statewide Aviation System Plan is currently under development. It will identify the extent, type, nature, location and timing of airport development needed in the State to provide a viable, balanced and integrated system of airports for the future. Besides identifying current and future development needs, the Plan will establish funding priorities.

The study is divided into three phases: Phase I - Air Carrier / Air Cargo Needs Study; Phase II - General Aviation and Economic Impact Study; and Phase III - The Capital improvements program and Database Management System. Initial findings indicate the need for expansion of air service. Travel patterns point to a potential need for commuter service to select rural and small urban areas.

Aviation in Georgia is impacted heavily by Hartsfield International Airport, Georgia's premier airport. The new international concourse and the fifth commuter runway at Hartsfield will add to the airport's capability to accommodate international traffic. Initial study results show that increasing demand from originating and terminating passengers in the Hartsfield market area will require additional capacity to support quality passenger service and future expansion of air cargo.

Results from the Georgia Statewide System Aviation Plan when complete, will be incorporated into the Statewide Transportation Plan. Recommendations from the Aviation Plan will shape the State's aviation program and support the aviation travel needs of the public and commerce.

The Georgia Commuter Rail Study

The Georgia Commuter Rail Study was financed by a transfer of ISTEA highway funds by the Georgia Department of Transportation to the intermodal study project. The Intercity Rail Passenger Study, currently underway, uses the same funding source. There has been recurring interest in commuter rail service to link suburban residents with jobs via rail. The need for commuter rail becomes more pressing in view of a forecasted increase of 55%[4] in highway travel over the next 20 years. Increased highway congestion and the resulting pollution has the potential for invoking sanctions as a result of existing non-compliance with the Clean Air Act Amendments of 1990. In addition there are state and federal energy policy considerations aimed at limiting the consumption of fossil fuel.

A consultant study was started in April, 1993 to consider the feasibility of initiating commuter rail service on 12 corridors in the north Georgia area. The Georgia

[4]FHWA, Highway Performance Monitoring system projects of traffic to 2012.

Commuter Rail Study results recommended phased implementation of service on six commuter rail corridors over the next several years. The study did not detail sources for funding commuter rail development. Commuter rail will become increasingly important as congestion and pollution escalate with escalating demands for transportation services.

The Intercity Rail Study will study technology ranging from conventional to high speed to connect cities in Georgia. Interest in intercity rail passenger service is a continuing topic of discussion among State leadership and transportation planners. Georgia has limited rail passenger service at present provided by four AMTRAK routes: The Southern Crescent (service between Washington D.C. and New Orleans, through Atlanta, Gainesville and Toccoa), The Silver Meteor, Silver Star and the Palmetto (travels between New York and Florida, through Savannah and Jesup). The Intercity Rail Study will look at the feasibility, financial requirements and types of technology for expanding service to other Georgia cities and providing connections to cities in neighboring states.

Establishment of rail passenger service, commuter or intercity, will require commitment of capital for train sets purchase, rail line rehabilitation, station restoration, signalization, and operating deficits that may result. The Georgia Commuter Rail Study and the Intercity Passenger Rail Study will develop the framework for the State's rail passenger program in the future.[5]

Federal Legislation

ISTEA - A New National Transportation Agenda

Federal legislation has impacted the transportation program substantially. Legislation in the areas of water quality, air quality and energy, in addition to ISTEA, has affected the extent and character of transportation improvements that can be made. Several elements of national policy emphasize preserving and making better use of existing facilities, utilizing the intermodal system to

[5]Discussion on Commuter Rail is found on page D-43.

advantage and making transportation a means for achieving economic development and environmental goals.

Some of the federal legislation impacting the transportation program include:

The Intermodal Surface Transportation Efficiency Act

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), as discussed earlier signaled the end of the Interstate era and the opening of a new age for the transportation program. ISTEA set out a national transportation policy, shifting program emphasis from construction of highways and bridges, to system operations and management of a seamless transportation network.

It is important to note that although ISTEA makes changes to the current program, it also preserves much of what was developed during the past four decades, building on experience gained from the Interstate era. ISTEA funding flexibility allows interchangeability of funds between surface modes.

The ISTEA transportation program is participatory, with public involvement an important part of the total process. Involvement of the public in transportation projects begins at the early stages and is continuous throughout the development process.

The Clean Air Act Amendments of 1990

The Clean Air Act Amendments of 1990 (CAAA) established new goals for the nation's transportation programs. The CAAA assigned transportation a central role in re-establishing clean air, along with industries and other institutions that share responsibility for air quality. CAAA requirements have reoriented the transportation planning program, making it more sensitive to the impacts of transportation decisions on air quality.

In some respects, meeting the mandates under CAAA was made easier by prior Congressional action. In response to public demands for clean air in the 1970s, Congress required automobile manufacturers to reduce emissions from new vehicles by 90%. During this time the auto industry developed new engines and emission-control devices. However, despite improvements to the environment from more

efficient automobiles with better emissions control, air quality continues to be a problem in major metropolitan areas.

Travel has increased more rapidly than population growth over the past two decades, reflecting the public's desire for the freedom and convenience of personal mobility. The continuing air quality problem results from the widespread presence of older vehicles on the road today. As vehicles age and grow more inefficient from a lack of proper maintenance, they give off greater levels of emissions. Old, poorly maintained cars can emit up to 30 times as much pollution as new cars.

An immediate impact of the CAAA on Georgia was the requirement for auto emissions testing in the Atlanta metropolitan area. Motorists annually bring their vehicle to testing facilities for tailpipe emissions inspection prior to renewing registration. Vehicles that do not pass are required to get a tuneup or to make other repairs up to a maximum of $50. New rules, beginning in 1995, will increase the standards for inspection and the maximum amount for repairs.

Rural areas are exempted under the CAAA rules as written in 1993. However, the potential for sanctions, including the cut off of federal transportation funds, if CAAA air quality targets are not met, could impact financing of the total state transportation program, both rural and urban.

The Energy Policy Act of 1992

The Energy Policy Act of 1992 set national goals for reducing transportation's dependence on oil in 2010 by 30%. The intention is to spur the production and use of alternative fuels such as natural gas, ethanol, methanol, electricity, propane, hydrogen and others. The Act mandates that federal fleets, state fleets and fleets of energy providers (such as Georgia Power or Oglethorpe Power) convert gradually to use alternative fuels.

Beginning in 1996, 25% of all Federal fleet purchases in urban areas must be fueled by alternative sources; by 1999 federal car fleet purchases will consist of 75% alternative fueled vehicles. State fleets will initially have 10% of new vehicle

purchases in urban areas fueled with alternative fuel sources; by the year 2000, 75% of the state fleet purchased will be powered with alternative fuels.

Because the Energy Policy Act focused on vehicle technology advancements, rather than on vehicle use, it did not have an immediate impact on the planning and programming of the overall transportation system. But, its effect will be felt deeply as an increasing number of vehicles are put into operation fueled by alternative sources, and this could have a profound effect on the future financial base for transportation improvements. New mechanisms will be needed to supplement the motor fuel tax which is the main source of financing improvements currently.

Other Major Trends In Transportation

Initiatives taken by federal and state governments have influenced the development of long range transportation objectives. Taken together the following have steered the transportation work agenda into the future.

The Changing Federal Investment Strategy

ISTEA reflected a major change in how the federal government invests public funds. Federal policy recognizes transportation mobility is central to the production and distribution of private economic output. Public facilities that support private economic output include public transportation, highways, railways, and airports; in addition, public facilities dedicated to water resources and waste water treatment plants are also considered essential to private economic output by most economists. There is a substantial national investment in public infrastructure capital valued at $1.2 trillion[6]. In 1990, federal infrastructure investments totaled $26.2 billion, with nearly $14 billion spent on highways.

To date, the rationale justifying federal investments have been both economic and social. Federal investments are necessary due to the lack of incentive for private markets, or state and local governments, to invest in programs which yield benefits outside their jurisdiction. It then becomes the role of the federal government to

[6]Congressional Budget Office, How Federal Spending for Infrastructure and Other Investments Affects the Economy, July, 1991, page x.

FOCUS expanded to include maintenance and operations improvements

ensure enough investment is made to satisfy national preferences.[7] The social rationale focuses on the need to standardize the level of certain goods and services for all parts of the nation and all segments of society.

In making investment decisions, the Congressional Budget Office has advised Congress that the highest economic benefits in transportation result "from maintaining existing infrastructure assets and expanding capacity in highly congested facilities."[8] Georgia's efforts to re-examine its role in transportation (through Transportation 2000 and development of the SWTP) came to the same conclusion - the public commitment to maintenance of the existing system needs, and expanding capacity where needed, should be continued. Federal policy for transportation outlined in ISTEA calls for even more efficient use of the existing infrastructure, integration of transportation modes and strategic use of transportation resources to accomplish economic and environmental goals.

Examining the ISTEA transportation program in light of federal investment policy points to federal expectation that private economic production will be increasingly linked to export trade and to the global marketplace - therefore the need for an integrated freight transportation network. The signing of GATT (General Agreement on Trade and Tariffs) and NAFTA (North American Free Trade Agreement) will open opportunities for manufacturing, agricultural and service sector exports - but the transportation portion of the trade equation will need to be supportive of the new opportunities. Similarly, national environmental concerns coupled with expanding mobility demands, will need to be addressed through the increased use of an integrated passenger and freight transportation network.

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[7]Congressional Budget Office, How Federal Spending for Infrastructure and Other Investments Affects the Economy, July, 1991, page 3.

[8]Ibid, page 41.

Financing an Intermodal Transportation System

Based on current taxing structures, federal financing of intermodal transportation will likely continue to be limited. Recent hearings to examine America's infrastructure by the House Public Works and Transportation Committee's Investigations and Oversight Subcommittee found $212 billion in unmet needs for highways in our nation, $78 billion to eliminate bridge repair backlogs and $18 billion needed for transit.[9]

The State financial prospectus does not look much better. Transportation has traditionally depended on user fees to finance operations and development. The motor fuel tax has been the main support of the road and bridge system in Georgia. The State has one of the lowest motor fuel taxes in the nation - 7.5 cents per gallon motor fuel tax plus an additional 3% sales tax; as compared with other states averaging 21 cents per gallon.

The current level of investment does not keep pace with the growing need for maintaining the existing system, providing for capital improvements, and economic development projects, including the Governor's Road Improvement Program (GRIP), supporting economic growth. To date the GRIP has been financed through General Assembly allocations. At the current rate of financing, it will take decades to complete the full GRIP system. During Transportation 2000, Georgians expressed a strong desire to complete the GRIP program as soon as possible and to include other routes complementing the GRIP system.

Another financial consideration to be taken into account is that the Georgia Constitution limits on the use of motor fuel tax to fund public roads and bridges. Funding for public transportation, rail, aviation and ports projects rely on general fund appropriations. Consequently, intermodal transportation projects compete with other State priorities such as education, crime, water, and social services for General Fund allocations. Fluctuations in financial allocations can hinder implementation of developmental projects that rely on a stable financial base to

[9]The Journal of Commerce, Friday, April 22, 1994, page 7B.

program multi-year capital projects, or that depend on operating assistance to support continued service.

Continuing reliance on user fee financing as a major support of transportation will be a central element of future plans, however, it may become a limited option. There are several reasons for declining yield of the motor fuel tax. Future motor fuel tax could produce less revenue as the Federal Energy Policy continues to expand the use of alternative fuels and the nation's auto makers continue to manufacture more energy efficient vehicles.

Future Financing Alternatives

New sources of transportation financing, as well as innovative financing methods to complement revenues from the motor fuel tax, will need to be considered. For instance, public private partnerships hold potential for leveraging public investment resources. The ability of a State to foster a competitive environment for attracting private funds may determine how aggressively transportation needs can be addressed.

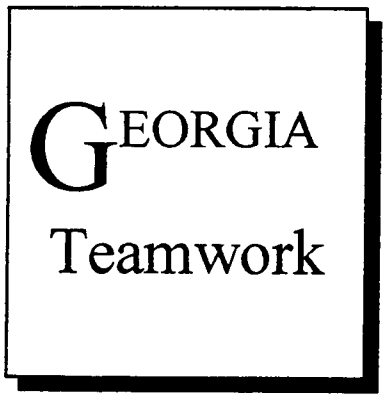
Robert W. Poole, President of the Los Angeles based Reason Foundation recommends:

> "The two key leverage principles that will expand total investment are: first whenever possible, use the federal funds as loans rather than grants; second, use as small a share as possible to attract the maximum amount of private funds - that is, not using the maximum permitted share."

Rather than using traditional match shares, Poole recommends federal and state funds could be used as a 25% share for privately developed projects where the private sector finances 75%. The success of this approach is conditioned on the viability of projects suitable for toll development or return on the private investment.

Future potential sources of revenue for consideration should relate to the burden placed on the system.

Teamwork for Georgia's Future



The Governor's initiatives for economic development have identified the need for State Departments to work together towards accomplishing an agenda to enhance opportunities for economic growth and to provide for quality of life. Transportation holds an important place on the State's Team. Several factors will foster teamwork among State agencies in the future. More efficient use of resources, both financial and manpower, will require coordination among sister agencies. Closer coordination among agencies having responsibility for economic development, the environment, safety, social services, education and other key programs will facilitate accomplishing State goals.

Teamwork with local governmental agencies, responsible for implementing programs, will also be necessary. The importance of developing coordinating agreements with local jurisdictions has become more apparent at GDOT as the Department proceeds to implement Advanced Traffic Management System (ATMS) improvements in the metro Atlanta area. Cooperation of the various City, County and private sector agencies, all part of the complex network of traffic management operations in the region has been critical to the success of the program. Improving the efficiency of transportation operations will require more of this type of cooperation in other areas.

There is also a growing awareness of the need for closer coordination with private sector modal operators. Much of the transportation infrastructure is owned and operated by local governments, quasi-governmental authorities, and private sector interests - not by State government. Airports and public transportation are often the responsibility of municipalities or authorities. Railroads are owned by the private sector; the ports are the responsibility of the Georgia Ports Authority and other private dock operators; and trucking is a private sector enterprise. Coordination with the private sector modal operators will be mutually beneficial, enhancing the effectiveness of modal services and promoting State goals in transportation.

The coordination of land use and transportation will require developing consensus with the private sector as well as with local governments. Inefficient land use can represent a high cost to the public and can lead to inefficient allocation of public resources. Coordination will be a key part to more rational use of land resources and to sustainable transportation. Developing an awareness of the need to work together at all levels of government and throughout the public and private sector is important.

Environmental Concerns and the Transportation Program

Environmental concerns are among the priority considerations for transportation planning, programming and development. The quality of the physical environment and our cultural and historic resources will need to be protected through responsible transportation decisions. State and federal regulations impose requirements on the transportation planning and project development process to assure that environmental concerns are addressed responsibly. Environmental laws have placed increased emphasis for achieving air and water quality goals on the transportation program. A transportation program should result in efficient use of the existing system through technological innovations in operations and the cooperation of individuals in making greater use of all forms of transportation.

Securing the cooperation of the public in expanding the use of other transportation modes in addition to personal vehicles will require concentrated work. There is a need to develop a new transportation ethic to create a balance between the quality of life and demand for mobility. This is recognized in ISTEA and other federal legislation. The aim is to make the public aware of the air quality, congestion and other consequences of mobility choices, and thereby encourage more responsible and positive use of all mobility resources.

Transportation Service for the Under-served is a Concern of the State Transportation Program

The lack of mobility continues to be a major problem for the elderly, the poor and for people with disabilities in rural and urban communities. Without transportation, many lack access to jobs, medical services, commercial establishments and full fledged participation in community activities. This is an economic burden to the

State budget; it also represents lost opportunity to the community, especially in rural areas.

In many rural communities lacking public transportation, residents find access to a regional center easier than to the local county seat. This serves to export financial resources out of the local community to nearby regional centers. In communities with rural public transportation, access to local centers is facilitated providing the opportunity to spend income from retirement, social security and other sources adding to the area's economic viability.

The Williams Commission, a Governor's appointed committee on State efficiency, pointed out another problem faced by residents of areas without public transportation. The state spends millions annually to provide mobility services. Transportation services are necessary if social services are to be dispensed to participants of Head Start, Older Americans and other social service programs. Providing transportation mobility to the underserved in rural and urban areas will depend on expansion of the public transportation program and its ability to address responsibly the need for all services.

KEY POINTS:

- ISTEA's policy for transportation, and the Vision developed in the Transportation 2000 program calls for a multi-modal transportation system that supports economic development, the environment and quality of life.

- State strategies for economic development recognize the crucial role of transportation in the state's future growth. Achieving state goals for economic development and quality of life will require state agencies to work together.

- Studies currently underway in aviation and just completed in commuter rail passenger service outline important transportation initiatives for serving future mobility needs in passenger rail and aviation.

- The lack of mobility that hampers productivity and the ability to participate by groups of people in rural and urban area is especially adverse to the state's economy.

- Funding for the state's transportation program will be a major challenge for the future; adequate financial resources will be critical to the ability of the state's transportation program to contribute to goals for economic development and quality of life.

- Environmental and congestion issues will increase the need for transportation options that focus not only on highway and transit capacity, but includes use of Intelligent Transportation System (ITS) technologies and advanced traffic management strategies.

MODAL PROFILE:

Highways and Bridges

THE ROLE OF HIGHWAYS AND BRIDGES

The intermodal transportation system serves a variety of purposes in our society including public travel, commercial shipping, military preparedness, and emergency and disaster relief. Each modal component has a part in the operation of intermodal transportation. The State's Highway and Bridge Network represents the backbone of the intermodal transportation system connecting and facilitating access between modes.

Transportation trends and technology have changed dramatically in the last five years mirroring dramatic changes in commerce and economic development world wide. The focus of commercial enterprise evolved from manufacturing to service oriented and from national to global. Major advances made by private sector transportation operators over the past years have a common theme - the selective use of different modes to optimize the efficiency of transportation movements while reducing cost.

There are many examples of intermodal transportation in Georgia. CSX's Hulsey Yard in Atlanta is a principal hub for CSX (Seaboard Railroad) operations in the southeast. Trains from Hulsey provide access to points nationwide. The terminal is located off Interstate 20 and two miles from Interstates 75 and 85. Containers entering the Ports at Savannah or Charleston travel into Hulsey on trucks or on rail for shipment to Chicago, Detroit, Kearny (New York), Long Beach and Orlando.

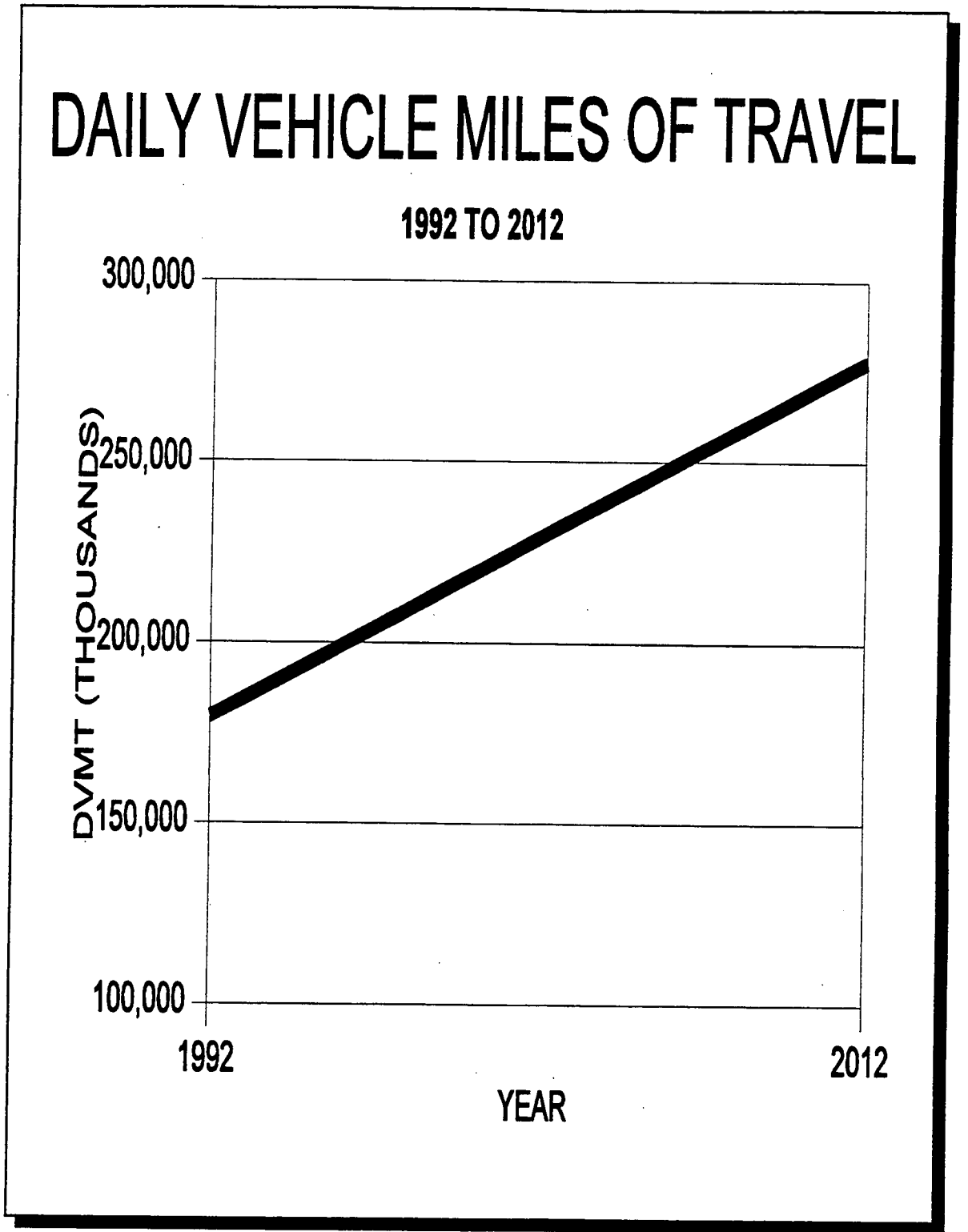
The intermodal service incorporates the best of two modes - the flexibility and responsiveness of truck transport and the economy of rail long-haul. The resulting transportation service is made even more attractive by single billing and computerized tracking systems assuring on time delivery and simplified administration. Intermodal service operations represent a growing part of the total domestic freight market.

With growth of intermodalism, the road and bridge system will play an even greater role as a major means of private transportation and for commercial freight movements. Although the use of other modes of transportation is expected to increase dramatically over the next two decades, highways and bridges will continue to be a key component for mobility nationwide (see Graph 1, page D-3). The personal vehicle and the truck are the mode of choice for most of the public and for commerce. A challenge of public policy in the future will be to balance responsibility for maintenance of the existing road and bridge infrastructure with promoting the use of other modes. Public education will be needed to develop awareness of the consequences of mobility choices and the need for a more balanced use of the multimodal transportation system.

Public Road and Bridge System

The Georgia State Highway system is one of the best in the nation. TRIP (The Road Information Project), a nonprofit organization that monitors the quality of the nation's highway system, named Georgia's roads and bridges the best in the United States. The performance and condition of the network are maintained through aggressive investments in road and bridge construction, maintenance rehabilitation and restoration programs. The road network includes 110,000 miles of public roads, with 18,000 miles classified as part of the State Highway System. About 80% of highway travel uses the State Highway System, which includes Interstates, Principal Arterials and other State roads. The remaining 92,000 miles are local roads, the responsibility of counties and municipalities.

The State Highway System contains a basic network of principal and minor arterial routes; these routes make up the core of the system for which statutory responsibility is placed on the Georgia Department of Transportation by the State Constitution and the State Code. The State Highway System is financed in large part through a combination of Federal Aid, State Motor Fuel Tax and appropriations from the State General Fund.



Graph 1 Source: Highway Performance Monitoring System

Bridges

There are over 14,750 bridges on the public road system in Georgia. Bridges are an essential element of the transportation infrastructure, impacting highway capacity and safety. About 5,300 Georgia bridges still in operation were built before 1960[10]. Bridge maintenance is a substantial part of the Department's current and long range work program.

Bridges are classified by function and operation. Bridges on the State System make up 41%[11] of the total. Bridges on the local system are owned by the local governments, cities and counties and serve traffic on local roads (see Graph 2, page D-5). Public bridges are eligible for federal funding based on condition, as determined in the bridge management system.

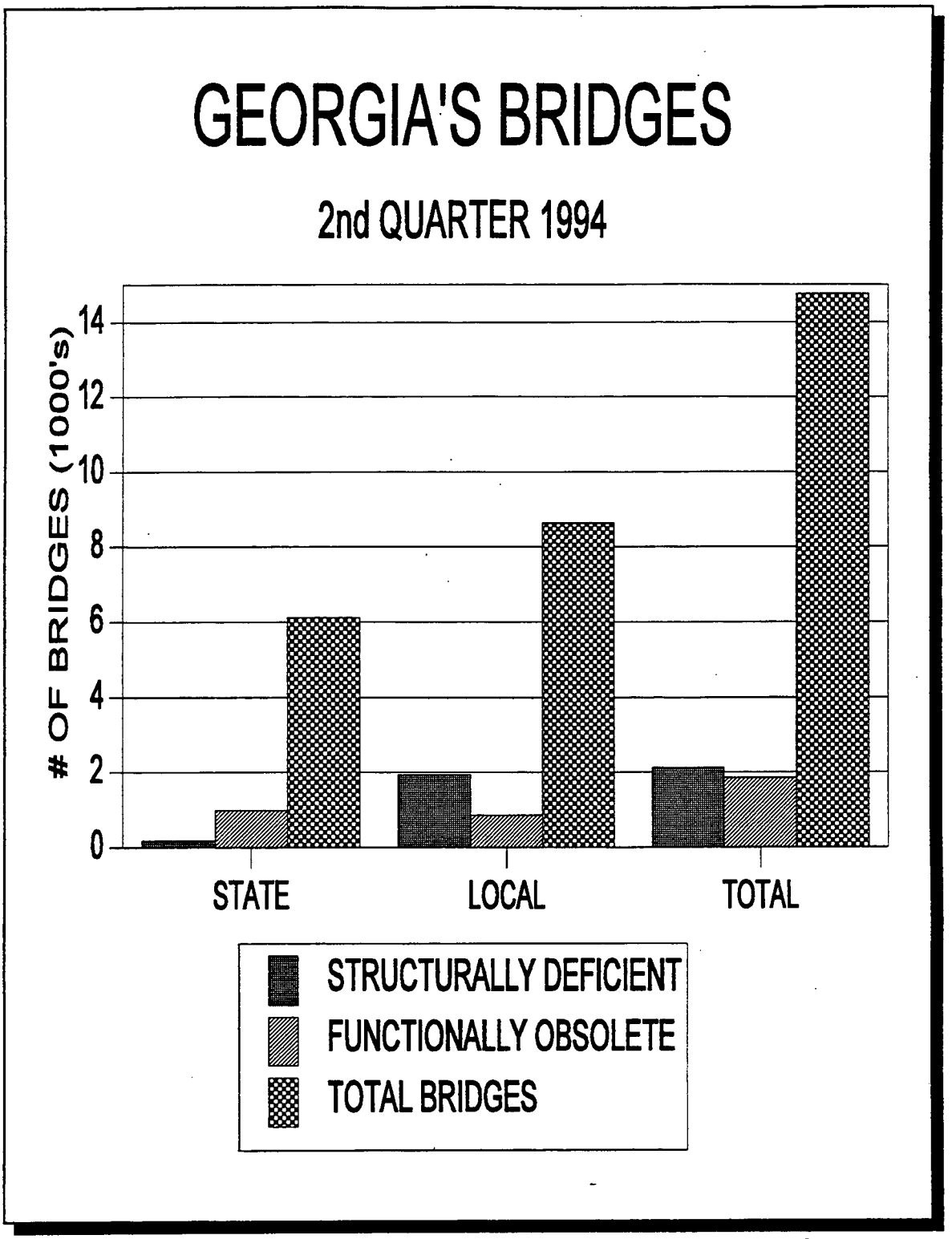
Bridges in Georgia are inspected and rated at least every two years for structural condition and they are continuously monitored for operations (total number and type of vehicle movements). Structural inspections update the DOT's bridge management system, documenting structure conditions and use of bridges and bridge culverts.

14,750 Bridges in Georgia

Deficiency classifications for bridges include "structurally deficient" (needs replacement), and "functionally obsolete" (the bridge will carry the load, but does not meet the current design criteria). Bridges that are classified as structurally deficient are eligible for replacement; functionally obsolete bridges are eligible for reconstruction. Obsolete bridges require widening or reconstruction in order to meet the demands of increased vehicular movements. Approximately 75% of the bridges classified as structurally deficient (needs replacement) are on the local system (see Graph 2, page D-5).

[10]Georgia Department of Transportation, Office of Bridge Maintenance, 1995.

[11]Georgia Department of Transportation, Office of Bridge Maintenance, August, 1994.



Graph 2 Source: GDOT - Office of Bridge Maintenance & Inventory

Roads

To understand the relative importance of road condition, as presented in this analysis, it is necessary to explain road classification. Roads and bridges are classified based on a hierarchy of use related to performance and function. The Interstate System and principal arterials are major arteries between national or regional origin and destination points; these roads carry a majority of trips. Collectors and local streets gather and distribute traffic between trip origin and the principal arterial and Interstate System. Each classification works together in an interactive network to facilitate mobility and access.

The Interstate System carries long distance highway traffic, providing access for personal, commuter and commercial traffic. Principal Arterial Roads and Streets provide a high level of mobility for intrastate and regional traffic movements. In the urban areas, Principal Arterials carry the majority of trips between the central business districts, the inner city and outlying residential areas. In rural areas, Principal Arterials provide for substantial statewide travel. Minor Arterial Roads and Streets link cities and towns. The Rural Major Collector Roads serve intra county travel to larger towns and other destinations. The Urban Major Collector Streets serve large residential neighborhoods, commercial strips and industrial areas. Minor Collectors and Streets serve smaller communities. Local Roads and Streets typically serve as access roads to residential neighborhoods and individual business or industrial sites. Working together, the various types of roads facilitate traffic circulation and link residential, commercial and industrial areas with Intermodal facilities.

Future Trends

The Federal Highway Administration's (FHWA) Highway Performance Monitoring System (HPMS) is used to evaluate the current and future condition of the road and bridge network. The HPMS is a federal requirement providing information on the physical condition, safety, service and efficiency of operations of the highway system. It is used at the national level to prepare annual highway budgets and congressional appropriations. The HPMS model analyzes over 2,400 annual samples in Georgia.

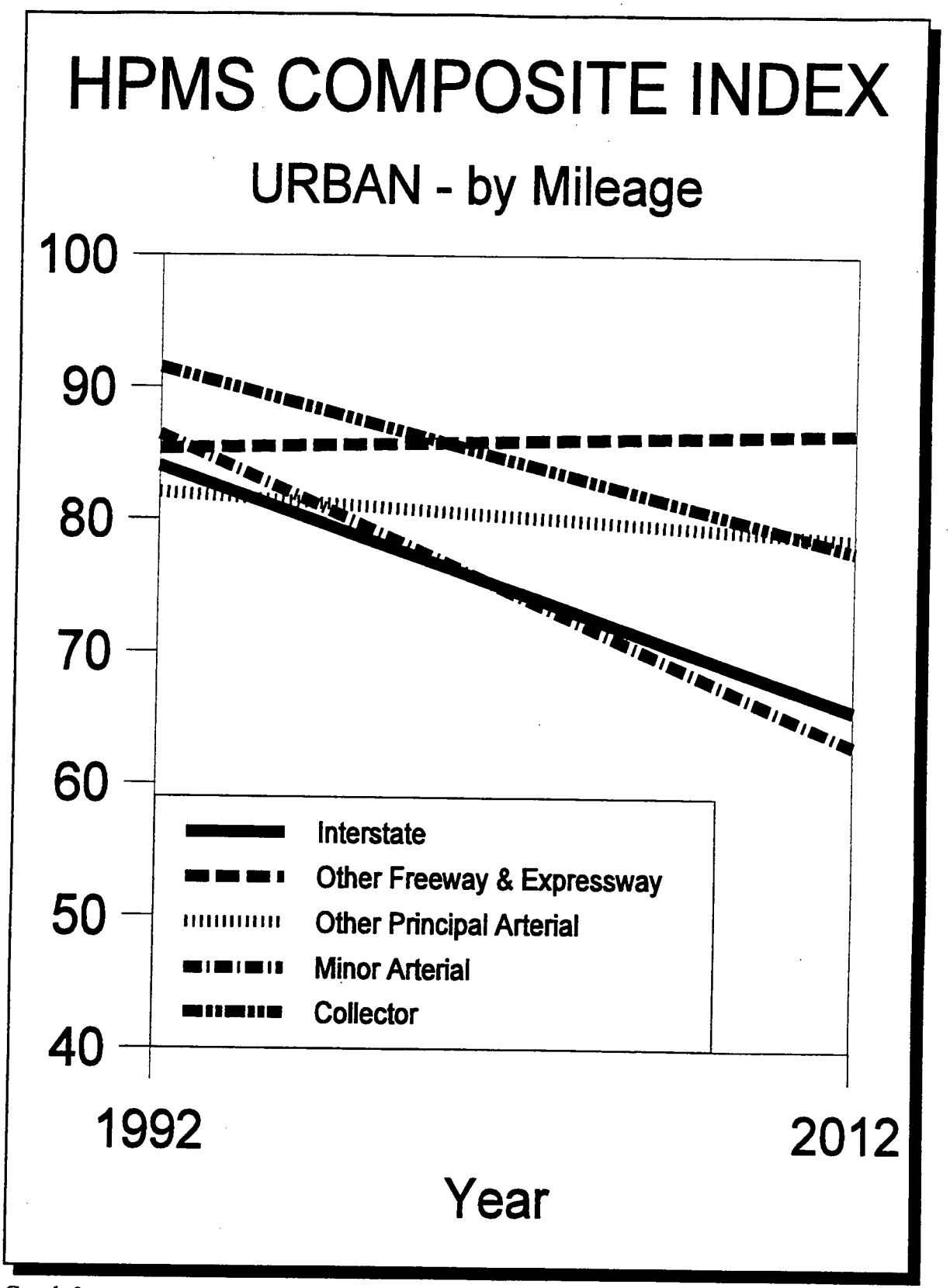
The HPMS analysis results use the road functional classifications described above. Of the various analysis done by the HPMS model, the composite index is the most comprehensive. The HPMS composite index provides an evaluation of the state's highway system, projecting the impact of financial decisions on the safety, condition and service parameters. A perfect composite index score is '100' - indicating excellence in safety, condition and service.

The results of the Model's Composite Index analysis show that, at the current level of investment, Georgia's state highway system will decline in quality from a score of 89 to 79 in Rural areas and 86 to 70 in Urban areas by 2012. The system will go from an "A" to "C" grade in condition. Major Interstate corridors will suffer substantially in both rural and urban areas, as will rural major collector routes and urban minor arterials.

55% Increase in Vehicle Travel over the next 20 years

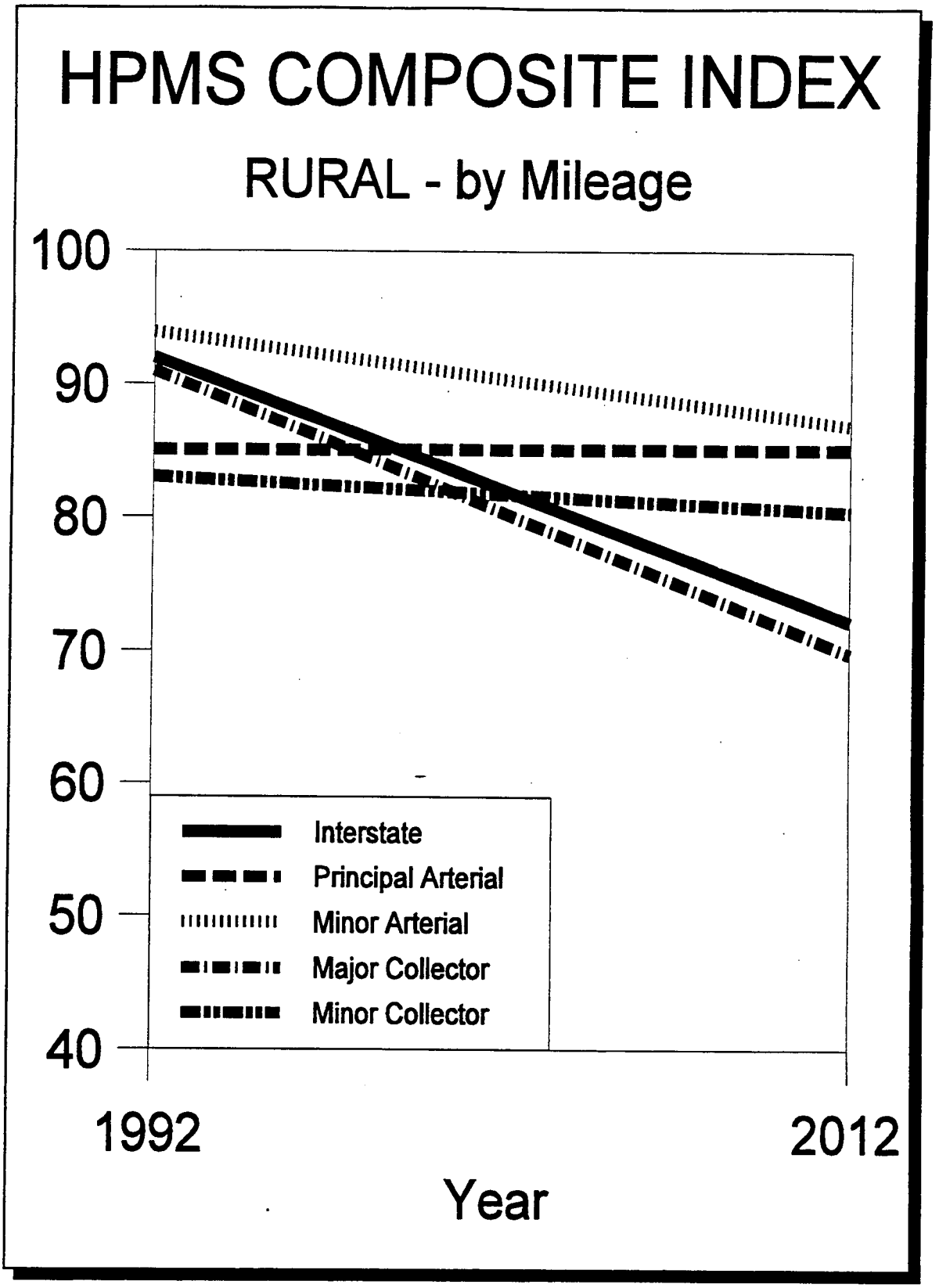
The composite index for urban areas shows a decline in the total system, especially in minor arterials and the Interstate (see Graph 3, page D-8). The analysis for rural areas is reflects similar declines. Interstates and major collectors, important to rural mobility will decline more rapidly than minor arterials, other principal arterials and major collectors (see Graph 4, page D-9).

Decline in road conditions will be accompanied by increased use. The HPMS model predicts an increase of 55% in DVMT (daily vehicle miles traveled-see Table 2, page D-10) on the total system; the majority of this growth will be in urban areas (urban DVMT will increase 64% to 167 million in 2012 from 102 million in 1992). A large portion of the urban traffic increase (71%) will be on minor arterials.



Graph 3

Source: Highway Performance Monitoring System



Graph 4

Source: Highway Performance Monitoring System

Daily Vehicle Miles of Travel in 1000's of miles			
Classification	**Base Year: 1992**	**Target Year: 2012**	**% Increase**
URBAN ROADS			
Subtotal	102,173	167,036	63.48%
RURAL ROADS			
Subtotal	77,301	110,653	43.15%
TOTAL	179,474	277,689	54.72%

Table 2 Source: Highway Performance Monitoring System

Traffic mix on the system will remain stable over the 20 year period, with trucks increasing slightly in urban areas. However, increased travel will reduce average travel speed for trucks and passenger vehicles. Average speeds on heavily used urban Interstates could decline by 32%, a 16 mph decrease by 2012; and a 14 mph decrease on rural interstates in 2012, about a 27% reduction in speed. Decline in average speed is an indication of increased congestion on both the rural and urban systems.

Highway and Bridge System Today: Initiatives and Challenges

The Highway and Bridge System today faces major challenges from a variety of fronts. Changes occurring in the economy have dramatically altered the mobility demands on surface transportation modes from industry and commerce. Just In Time (JIT) deliveries is an example. JIT is utilized by shippers to limit the need for

costly warehousing of raw and semi-finished materials used in production and assembly. Instead, manufacturers rely on JIT deliveries from suppliers to maintain a flow of materials and parts necessary for production. JIT impacts local and regional transportation systems increasing the frequency of commercial trip making use on existing facilities.

In addition, the transportation program must deal with demands from changes in the population, working habits, travel patterns and the special needs of an aging population. Each of these pose challenges to addressing the increasing demands of a growing population.

New Transportation Initiatives

The road and bridge portion of the transportation program has spurred development of several initiatives over the past few years. These initiatives are an important part of the transportation agenda in defining the role of transportation as a support to achieving State goals. The National Highway System (NHS), the Governor's Road Improvement Program (GRIP) and other transportation proposals have begun to structure the format for developing a positive environment for Georgia's future growth.

The National Highway System

The National Highway System (NHS) is the next evolutionary phase after the Interstate Highway System. The original Interstate System was developed to serve defense access needs, personal travel, commercial freight movements and economic development. It represents the product of a bold and ambitious vision. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) mandated development of the National Highway System; it represents the next step in creating a national transportation network following completion of the Interstate System (see Map 6, page D-13). The NHS is composed of five parts: the existing Interstate Highway System, the Strategic Highway Network (STRAHNET), congressionally designated corridors (i.e. U.S. 80 from the Alabama line to Savannah and the Atlanta to Memphis Highway from the Alabama line to Atlanta) and other rural and urban principal arterial routes that provide access to major ports, airports,

international border crossings, public transportation facilities and intermodal transportation facilities serving Interstate and interregional travel.

Georgia's proposed 4,651 mile NHS system accounts for 4% of the public road system mileage and will carry 39% of the State's total highway travel, approximately 15%[12] of the total will be freight movements. The NHS will serve as support for economic growth. Trucks transported 68% of Georgia's total freight movements, serving 79,000 truck dependent industries and employing 1.5 million Georgians[13]. The national transportation policy recognizes that business productivity, and the national living standard are tied to a well-connected, well-maintained highway system. NHS appropriations will be targeted to continuing quality transportation on a road system that connects population centers, with airports, seaports, and rail terminals.

In its deliberations, Congress will review the proposed NHS network, connecting freight and passenger transportation modes. By September 1995, Congress is required to designate the National Highway System network from the submissions made by the United States Secretary of Transportation. As opportunities from the North American Free Trade Agreement (NAFTA) develop, trucks are expected to carry 80% of the freight between the United States and Mexico[14]. A system that recognizes the need for maintaining North-South connections will be able to respond to the mobility needs created by economic opportunities in the NAFTA treaty. Georgia's transportation network provides the option of utilizing the facilities to access NAFTA markets.

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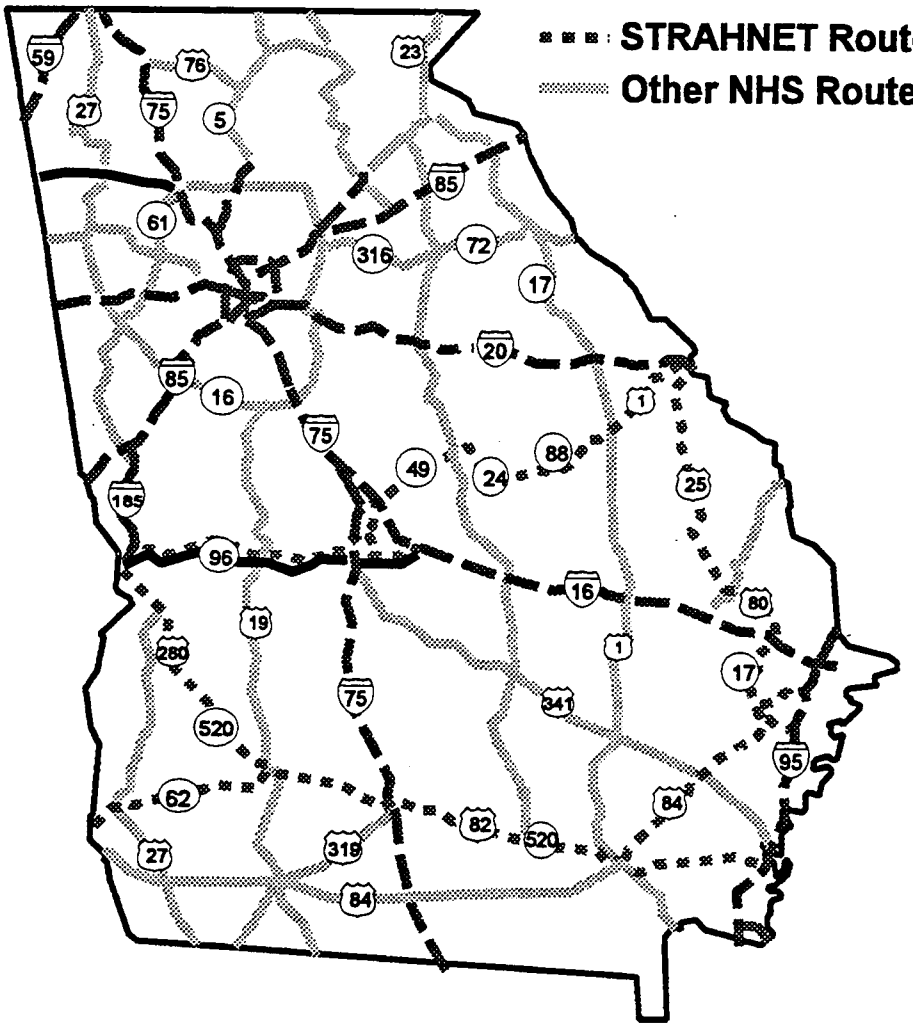
[12]Georgia Department of Transportation, Planning Data Services Bureau, April, 1994.

[13]Georgia Motor Trucking Association, The American Trucking Association Foundation, Trucking in Georgia, 1991.

[14]U.S. Department of Transportation, Federal Highway Administration, The National Highway System: The Backbone of America's Intermodal Transportation Network, page 6.

Proposed National Highway System (NHS)



Map 6

Source: GDOT - Office of Planning

The growth in truck trailers and ocean containers moving by highways and rail, justifies selection of a road network connecting to major freight centers. The number of loaded trailers and containers transported by the nation's railroads has doubled in the last 10 years with annual growth averaging 7%.[15] Industry experts predict that intermodal volume will reach 10 million loads by the year 2000. In addition, nearly 27% of freight transportation shipping (as measured in ton miles) in the United States uses trucks[16]. An NHS network that identifies the most productive roads, connecting modal resources and economic generators is a wise public investment in the economy.

Governor's Road Improvement Program (GRIP)

A system of multilane highways has been identified in the state as a means of maintaining and enhancing Georgia's competitive position in the Southeast. As late as 1987, only 731 miles, or 6.5% of the State's total primary system were multilane highways. This was substantially lower than the average 19% for other states in the Southeastern region. The need for more multilane roads became apparent after studies demonstrated a linkage to economic development of local communities. The GRIP system was conceived to attract economic development by facilitating movement of bulk goods for Georgia's manufacturing, service and farm economies, providing a 'business friendly' environment for new economic development and jobs and providing access to tourist, recreation and historic sites (see Map 7, page D-15).

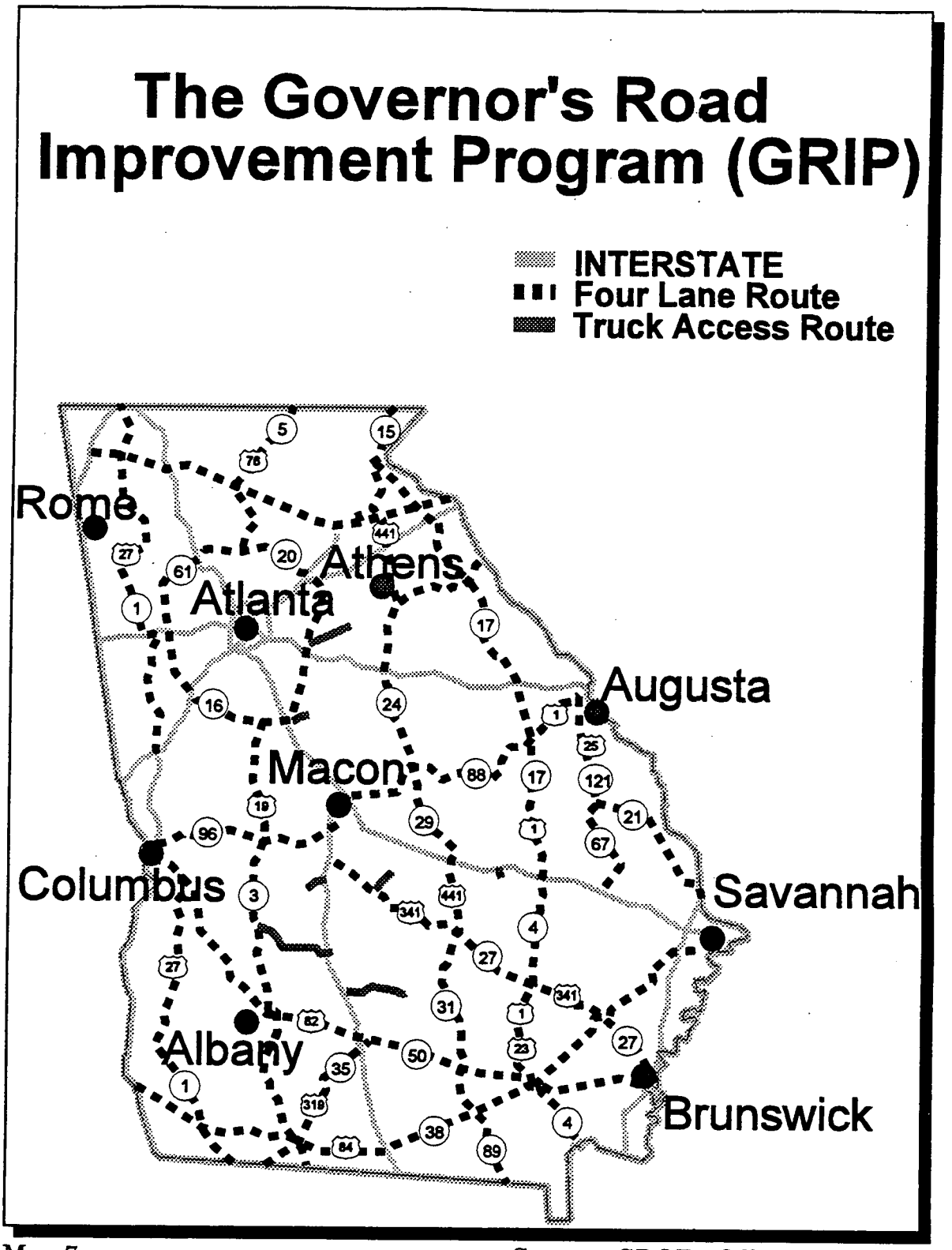
GRIP

attracts economic development to local communities

[15]Journal of Commerce, An Intermodal Network, March 11, 1994.

[16]U.S. DOT, Bureau of Transportation Statistics, Transportation Statistics, Annual Report 1994, January, 1994, page 58.

The Governor's Road Improvement Program (GRIP)



Map 7

Source: GDOT - Office of Planning

GRIP consists of 2,777 miles of existing primary routes, plus 113 miles of truck connector routes (see Map 7, page D-15). The system will place 98% of the state's population within 20 miles of a multilane highway. The roads are designed to accommodate oversized trucks, providing access to urban populations centers of 5,000 or more. The improved multilane highways will reduce travel times, improve safety and reduce energy consumption and vehicle maintenance costs. Improved mobility is expected to create an environment for business development to attract new industry and jobs, as well as make existing Georgia businesses more competitive.

The GRIP program originally contained 14 corridors and 2,626 miles; the 1994 session of the Georgia General Assembly added a 15th corridor. The Appalachian Scenic Parkway (approximately 150 miles) serves the north Georgia area by providing east-west access across the State's northern region. The area is currently served by disconnected roadways which hamper a convenient cross-state connection.

The Sidney Lanier Bridge Replacement

Replacement of the Sidney Lanier Bridge at Brunswick resolves a serious and growing hazard to navigation from the bridge's narrow 250 foot navigational opening. The Sidney Lanier Bridge was the sight of ship-bridge collisions in 1972 and again in 1987 resulting in 11 deaths and repair costs of $2.4 million per accident.

Based on shipping forecasts and prior history of collisions, there is a high probability for future collisions with expected increase in ship calls. Brunswick Port has experienced a dramatic increase in activity from large auto carrying vessels. Replacement of the Sidney Lanier Bridge will result in development of safe navigational passage to accommodate increased shipping, at the same time, providing important land access linkage to the Port.

Other Basic Services of The Road and Bridge Network

The road and bridge network plays a central role in facilitating access to essential services. At the beginning of this chapter, travel purposes were listed. What follows

is a description of different types of functions that rely on the road and bridge network.

Other functions served by Roads and Bridges include Defense and Evacuation

The Strategic Highway Corridor Network (STRAHNET)

The Strategic Highway Corridor Network is part of the US Department of Defense (DOD) mobilization and rapid deployment strategy (see Map 8, page D-18). In case of emergency, armed forces are sent to designated Ports of Embarkment for immediate dispatch and rapid deployment. A recent major deployment was Operation Desert Storm and subsequently, on a smaller scale, in response to the crisis in Somalia and Haiti. Geo-political situations worldwide continue to place unique demands on our national resources and on the transportation system, especially highways. DOD expects that half the equipment tonnage required to support a full-scale military mobilization of active and reserve forces would travel on the 15,000 mile STRAHNET system (Georgia has responsibility for 1,000 miles of STRAHNET).

The military has embraced Intermodalism with enthusiasm. In a proposal sent to Congress on March 10, 1994, the Pentagon declared its intention to negotiate for priority access to intermodal equipment, rail and truck service, warehouse space and computer and management services of subsidized carriers. The transportation and logistics advantages of intermodal arrangements, set up in advance, would reduce costs and improve efficiency of movements. Maritime Administrator Al Herberger was quoted as saying, "We're looking for access to a network. That can be through leases or operating agreements. We want to work with people who can arrange a whole trip."[17] The most notable lesson from this policy change is that current military thinking uses the entire intermodal network in developing military logistics operating strategies.

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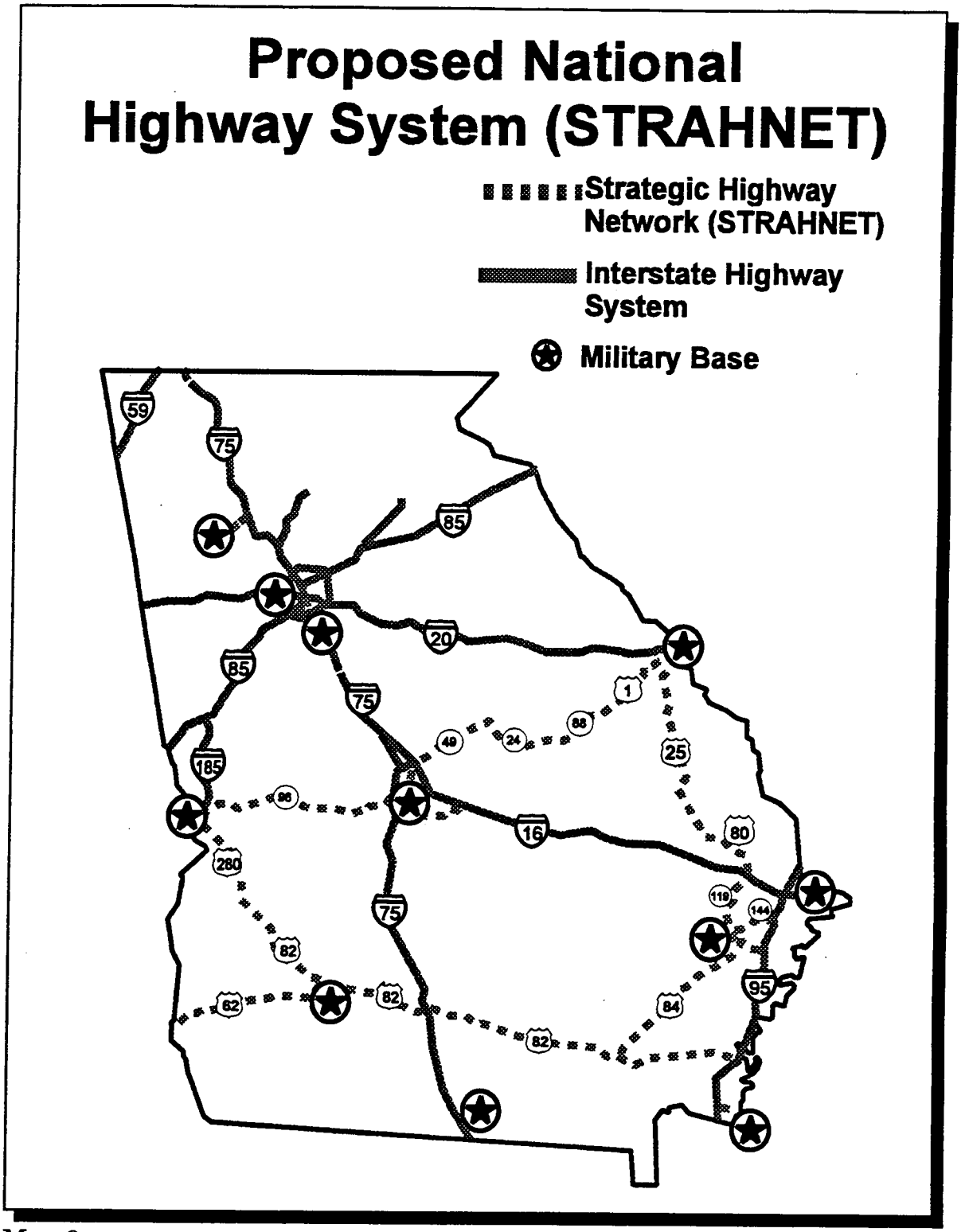
[17] The Journal of Commerce, Defense Goes Intermodal Under Subsidy Proposal, Wednesday, March 23, 1994, page 7B.



Map 8 Source: GDOT - Office of Planning

Emergency Disaster Evacuation Routes

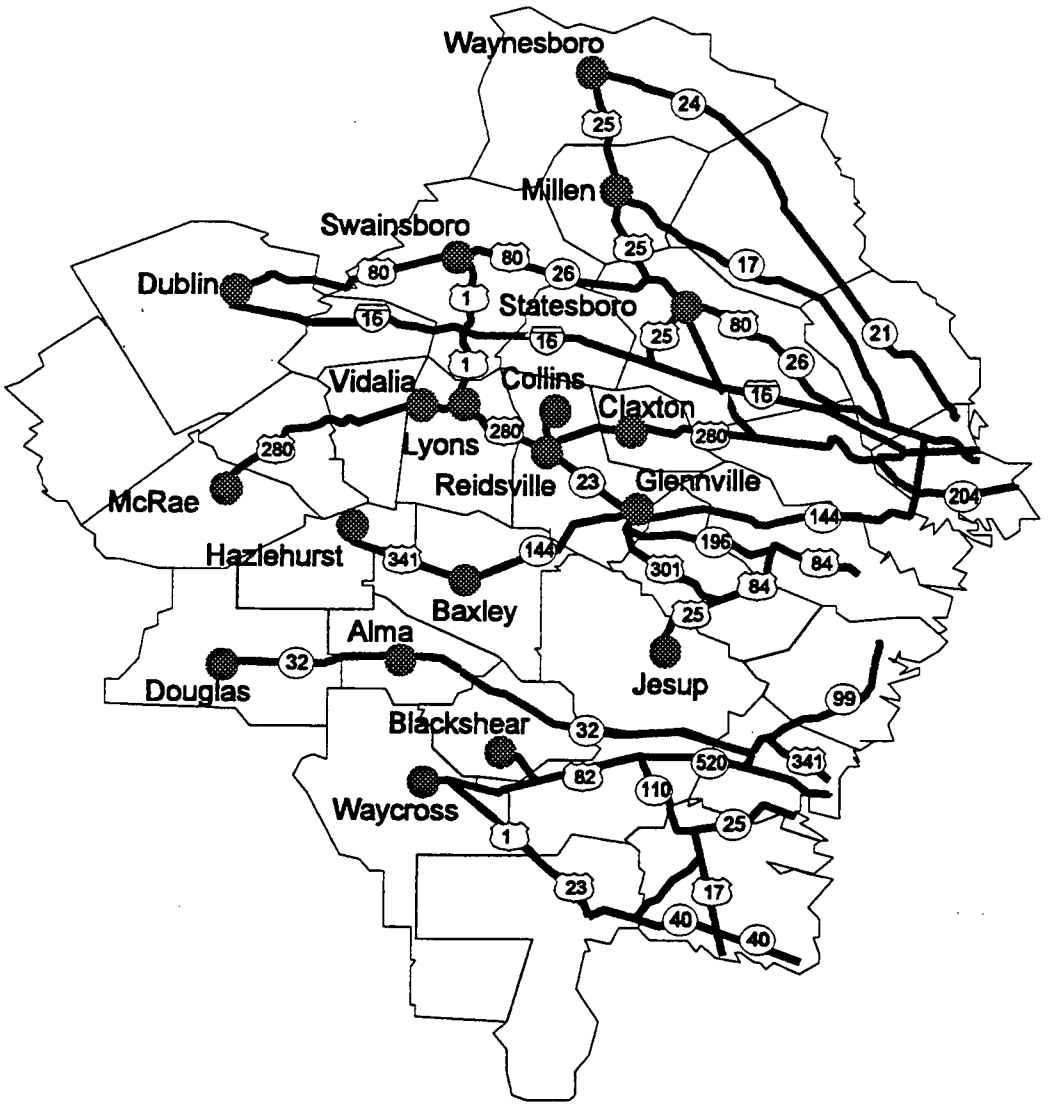
The destructive potential of hurricanes has been clearly demonstrated along the eastern coastline, but recent events have shown that other areas are also vulnerable. Georgia has been fortunate to have been bypassed by Hurricane David in 1979 and by Hurricane Hugo in 1989. However the death and destruction wrecked by tornadoes in North Georgia in March 1994, as well as the flooding in Central and Southwest Georgia in July, 1994 by hurricane Alberto, has underscored the need to be prepared to save lives and protect property.

The Georgia Emergency Management Agency (GEMA) has a comprehensive plan of action (the Georgia Emergency Operations Plan, GEOP) through which the State is prepared for the potential threat and destructive impacts of severe weather. The focus of the plan is the 32 coastal and contiguous counties of Georgia. The plan sets forth actions to be taken, including evacuation routes and shelter areas for evacuees.

The GEOP provides for a staged response to worsening hurricane conditions beginning with Hurricane Readiness Operating Condition 5 (OPCON 5), and progressing to emergency conditions as warranted. Once evacuation has been ordered by the Governor (after GEMA declares a situation of OPCON 2), law enforcement agencies and the National Guard are authorized to proceed with evacuation using the designated evacuation road network.

The area has been organized into three zone areas with critical roads identified (see Map 9, page D-20). Zone 1 is expected to be the area of immediate impact; zone 2 would be secondary impact and zone 3 is expected to host evacuees. Evacuation routes have been identified, and GEMA is authorized to clear vehicles from evacuation roadways, and do whatever is necessary to assure evacuation efficiency. The road network is a critical element of the Georgia plan for emergency preparedness and for restoration following a natural disaster.

Hurricane Evacuation Routes



Map 9 Source: Georgia Emergency Management Agency

Surface Transportation Assistance Act (STAA) Truck Routes

The Surface Transportation Assistance Act of 1984 (STAA) designated routes to facilitate the movement of freight. The STAA Truck Routes represent a way in which highway improvements have addressed the need to increase the efficiency of trucking operations. Trucks over 67.5 feet and twin trailers are permitted on the 7,340 mile Georgia STAA network and the 642 mile Georgia designated oversized truck routes (see Map 10, page D-22).

These routes are heavily used for truck shipments. The Interstate System serves as the base for the STAA network. Trucking is a steadily growing user of the road system; truck shipping will handle 8.3 billion tons[18] of domestic freight before the end of the century increasing national market share from 72% to 80%[19] of the domestic freight market. There are substantial issues in this area that need to be addressed if trucking is to be an effective partner in the development of a seamless transportation network.

Issues of ITS (Intelligent Transportation System) as they apply to trucks will help in making truck service more efficient. One Stop Shopping, a proposed consolidation of revenue, credentials, license and oversized permitting processing, would decrease the red tape currently associated with doing business. Interstate agreements that recognize single state permitting and distribution of fees would further decrease the cost of transportation and the time expended by truck operators on paperwork required for compliance.

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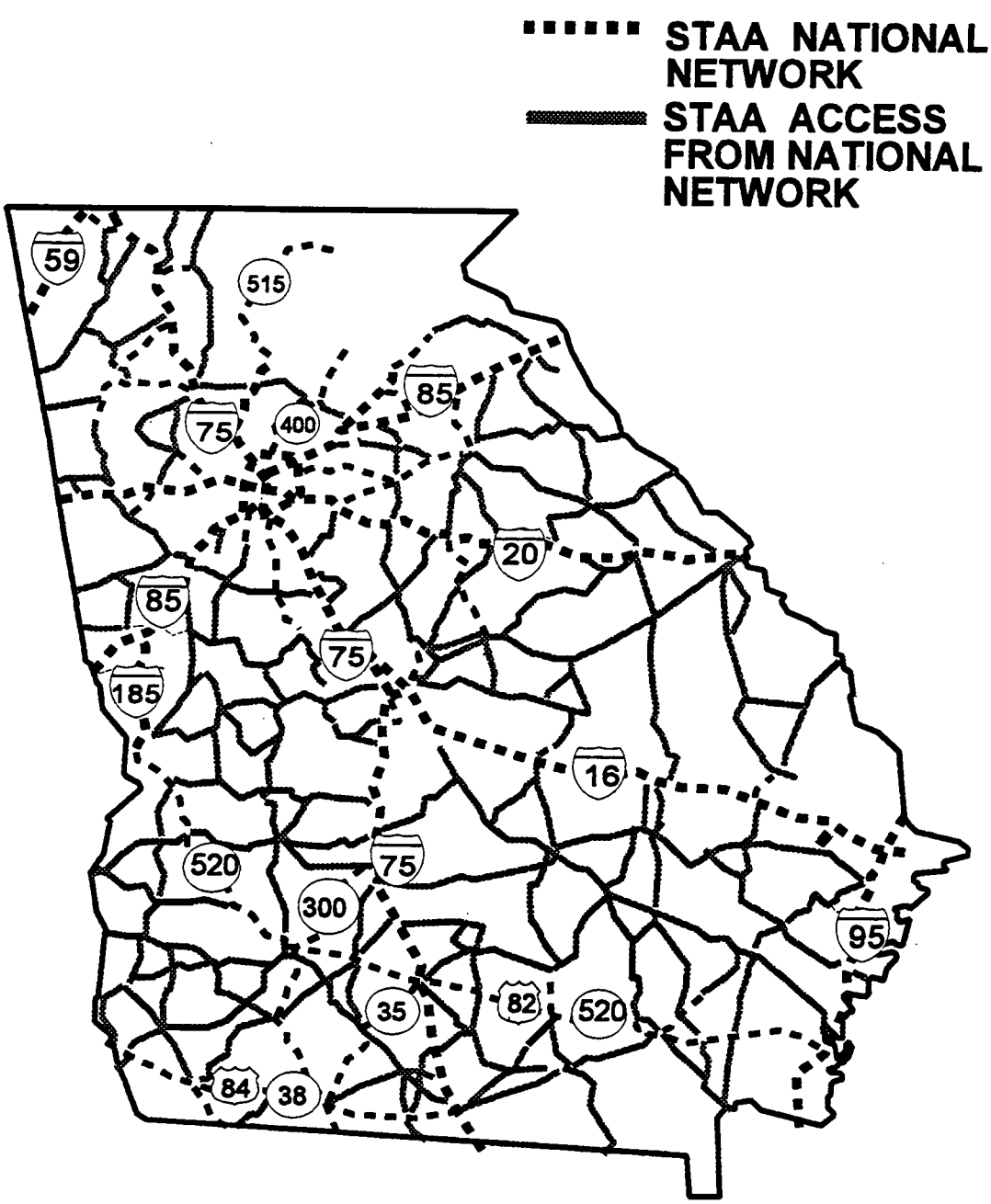
[18]American Trucking Associations Foundation, 21st Century Trucking - Profiles of the Future, 1994.

[19]Ibid.

Georgia Oversize Truck Routes



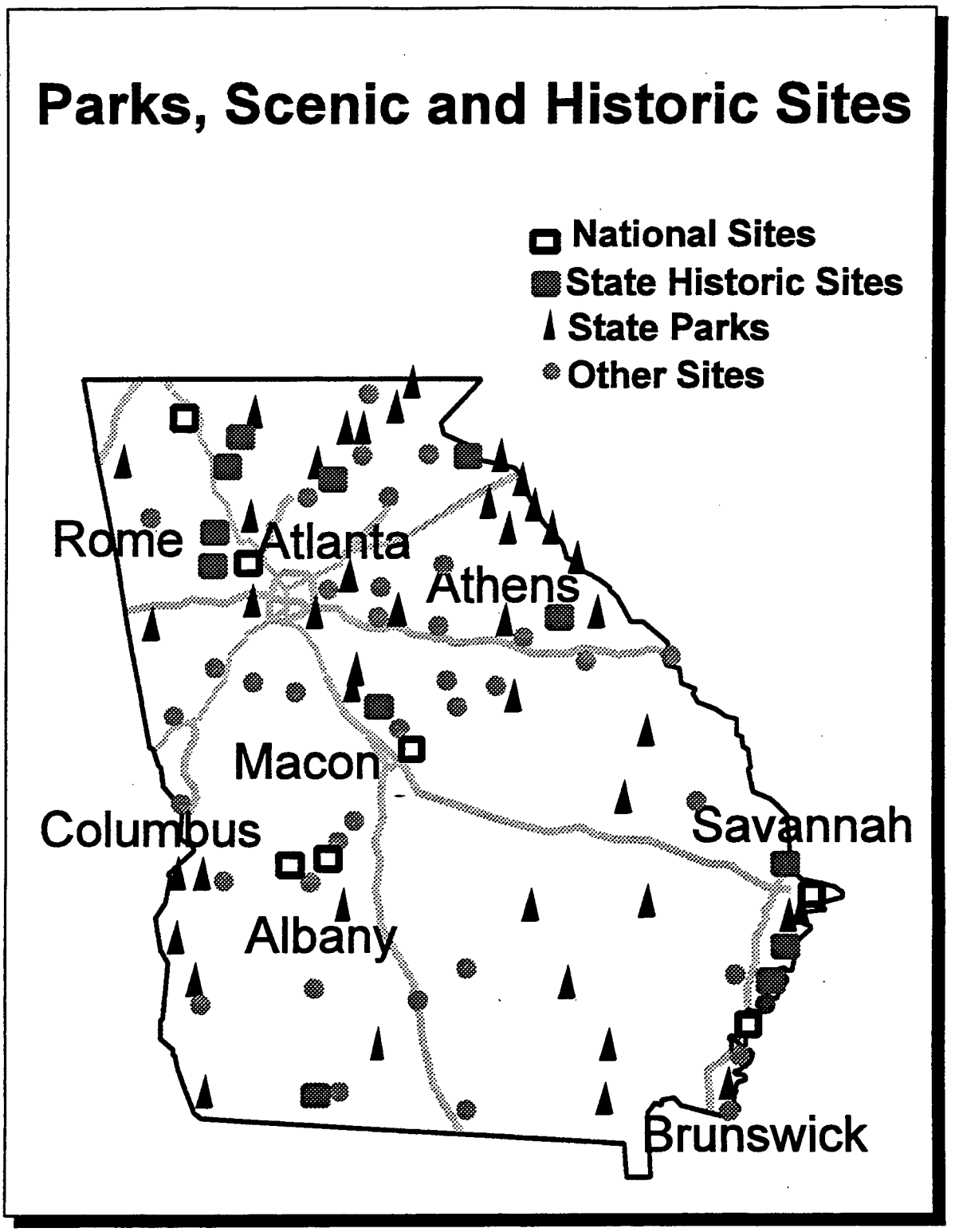
Map 10

Source: GDOT - Office of Planning

Scenic Highways and Historic Bridges

A program that contributes to the quality of the environment is Scenic Highways. ISTEA designated a small amount of discretionary funding for Scenic Highways. Corridors that qualify for Scenic status must demonstrate scenic, historic, recreational, archeological and cultural integrity (see Map 11, page D-24). To date there are two approved scenic byways in the State: the Ridge-Valley in Walker and Floyd Counties and the Russell-Brasstown in White, Union and Towns Counties.

The State has eleven covered bridges, mostly located in the northeast. There are other bridges listed on, or eligible, for the National Register, some are current projects. Historic bridges add to the quality of life and enhance the aesthetics of the transportation system. They also are the building blocks for development of recreational industry and tourism in the states. Access to parks, recreation and scenic areas, monuments and historic sites is important to development of rural economies. Tourism and recreation is one of the fastest growing sectors of the economy. The road and bridge portion of the transportation program will need to continue and expand programs to facilitate access to areas of tourist interest.



Map 11 Source: Department of Industry, Trade and Tourism

KEY POINTS:

- Georgians will continue to depend on the road and bridge network as a primary source of mobility.

- The road and bridge system is the backbone or for intermodal connections; therefore the condition of that system will determine the quality of intermodal "seamless service" that can be provided.

- Maintenance and operation of the road and bridge system is a priority. Unless concerted action is taken, increased demands for mobility could increase congestion and compromise system efficiency.

- Expansion of the road and bridge network will be limited by available resources.

- Limits on new construction for use by personal vehicles, in air quality non-attainment areas, will place greater reliance on the management of existing infrastructure for increasing mobility.

- ITS technologies will need to be implemented statewide in the future to gain efficiencies in the highway system.

MODAL PROFILE:

Public Transportation

THE ROLE OF PUBLIC TRANSPORTATION

Some form of public transportation is available to nearly four million residents in urban and rural areas. The importance of public transportation service to the Georgia economy and the quality of life of the population is extensive.

Public transit systems are the mode of choice for many, and the only available means of mobility for others. Transit service provides the underserved (the disabled, the elderly, students, lower income residents and others unable to drive) with transportation to jobs, schools, medical treatment and commercial activities. Use of public transportation services varies; in Atlanta, public transit serves an estimated 8% of the total trips made, while in rural areas of the state 4% of the trips use public transportation.

In urban areas public transportation is a tool for transportation management, with potential for reducing congestion. By reducing the number of personal vehicles on roads, public transportation programs can increase the mobility of the highway and road networks, relieve congestion and reduce pollution. Making more efficient use of the existing transportation infrastructure will require focusing on operations improvements that increase the mobility of people instead of vehicles. Operations of buses, vans, carpools and rail transit facilitate people movements by means that are energy efficient, economical and effective.

The role of public transportation will change dramatically over the next 20 years. The State government has a strategic interest in the expansion of public transportation. State government spends about $20 million annually[20] on social service transportation. The Department of Human Resources (DHR) owns approximately

[20]Letter from Commissioner Jim Ledbetter, DHR to Commissioner Wayne Shackelford, DOT, November 7, 1994.

1,868 vehicles[21] used in the operations of these services besides contracting for services with public and private operators. Expansion of the public transportation system statewide offers an opportunity for making better use of state resources spent on transport of Human Resources clients.

Current cost to the state for social service transportation appears high when compared with the cost of public transit operations of other transit systems in the state. MARTA, operating nearly 700 buses and 250 rail cars had the highest operating deficit in the State: $93.2 million in 1992. The balance of the nine public transportation systems, operating just under 300 buses, had an operating deficit of $13.3 million. Rural transit systems' vans operated in 1992 with the smallest deficit, $2.0 million for the county systems active in that year (see Table 3, page D-28)[22].

Coordination of transportation services to address needs of local areas, including social service transportation, would result in substantial savings for the State and better quality transportation for users. An expanded public transportation program could probably service the total needs of the community. Along with the challenges posed by the environment and congestion, the State's social service transportation needs are a major transportation issue.

Urban Public Transit Systems

Georgia has ten urban public transportation systems in operation including Albany, Athens, Atlanta, Augusta, Cobb County, Columbus, Douglas County, Macon, Rome and Savannah (see Map 12, page D-30). The Metropolitan Atlanta Rapid Transit Authority (MARTA) is by far the largest of the State's public transit operations. MARTA is a multimodal transit system, operating traditional fixed route/fixed schedule bus service and rapid rail. The other nine public transportation systems operate a fleet of 286 buses and 206 vans. Douglas County and Cobb County operate commuter vanpool programs that are unique in the State. The vanpool alternative is a valuable operation in suburban areas.

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[21]Governor's Commission on Effectiveness and Economy in Government, Report #3, December 4, 1991.

[22]Georgia Department of Transportation, Office of Intermodal Programs, 1995.

TRANSIT OPERATIONS DEFICIT (1992) NET DEFICIT (Operating Expenses less Revenues)		
Urban Public Transit	$13.3 million	(9 systems, not including MARTA)
Rural Public Transit	$ 2.0 million	(68 rural counties)
DHR	$20.0 million	(social service transportation)
MARTA	$93.2 million	(bus and rail system)

Table 3 Source: GDOT - Office of Intermodal Programs

Buses operated by Georgia transit systems ranged in age from new to 25 years old. In general, transit systems cannot apply for federal funding to replace existing equipment until the end of the equipment's useful life (500,000 miles and 12 years old for 35 foot buses according to federal standards). New vehicles must comply with requirements set by the Clean Air Act Amendments of 1990 and by the Americans with Disabilities Act. To comply, new vehicles must be lift equipped and powered by special bus engines developed to decrease emissions. The cost of capital vehicle purchases for transit operations is expected to escalate. Increased capital cost will have to be financed from state and local sources because increased federal funding is not anticipated.

The Clean Air Act Amendments of 1990 spurred transit operators to investigate the use of alternate fuels. Several transit agencies have already taken the first step in coordinating with utility companies. In Savannah, the Chatham Area Transit Authority (CAT) arranged for delivery of four electric buses for shuttle operations in the historic district. In a public/private partnering arrangement with the Savannah Power Corporation, CAT received assistance in financing a charging facility at the CAT maintenance facility. MARTA will purchase Compressed Natural Gas (CNG) powered buses for service in Atlanta. Alternate fuels, such as electric, CNG and others, can make a positive contribution to improving air quality. Recently, a project was submitted to initiate a Revolving Loan Program for public entities to convert

their fleet to alternate fuel use in the Atlanta area. The program proposes use of ISTEA and Office of Energy funds for a maximum of ten years.

The following table (Table 4 below) highlights public transit annual operations over the last three years:

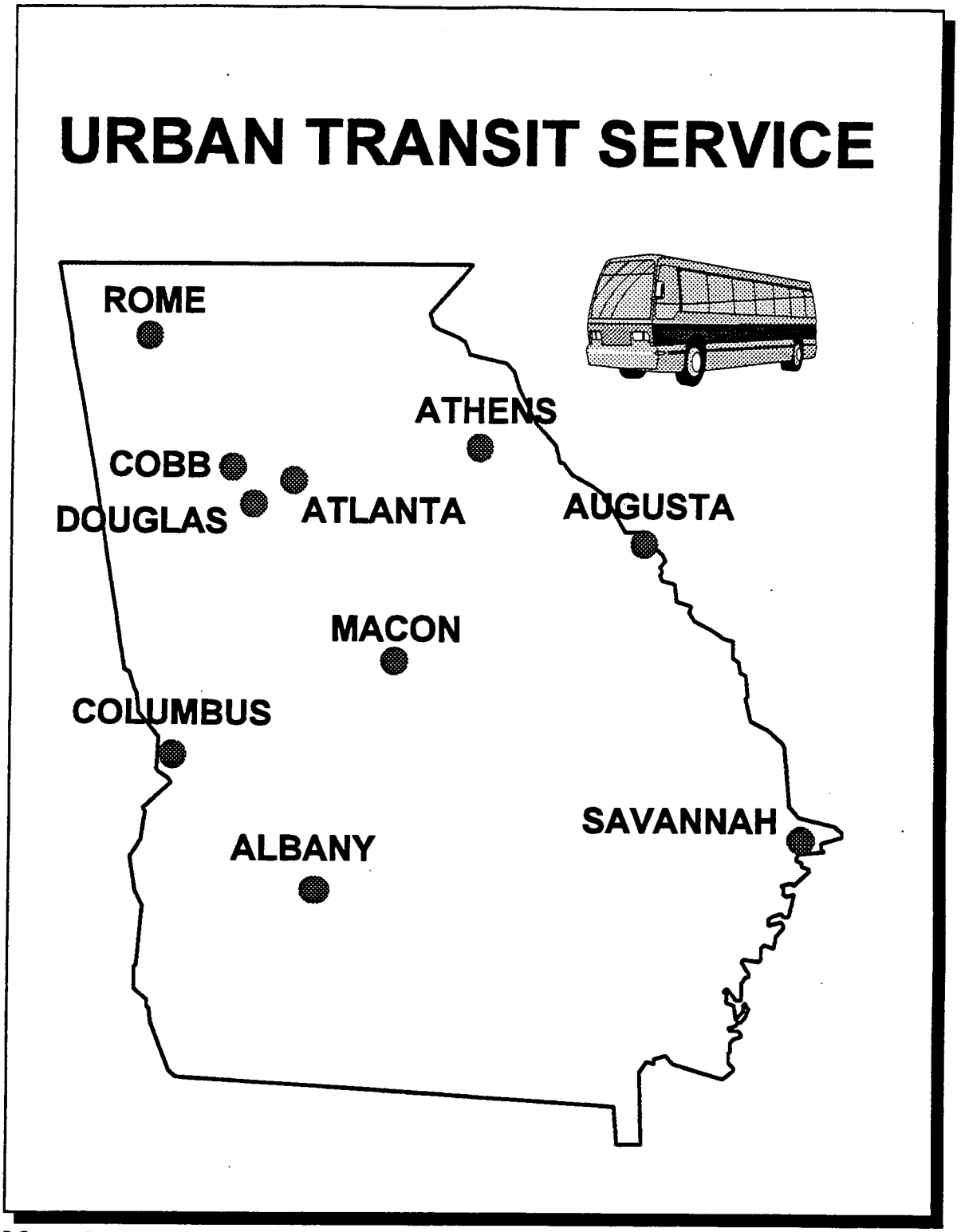
GEORGIA PUBLIC TRANSIT OPERATIONS			
	1990	*1991*	*1992*
Unlinked Pass. Trips	161,706,591	156,119,998	153,042,160
Vehicle Service Miles	49,382,264	49,519,068	49,852,855
Vehicle Service Hours	3,197,071	3,144, 375	4,200,456

Table 4 Source: GDOT - Office of Intermodal Programs

Public transit ridership has decreased since 1990. Annual unlinked passenger trips[23] totaled 153.0 million in 1992; 139.2 million were trips made on MARTA. Even with a slight downward trend in ridership, service, as measured by hours of operations and miles of revenue service, has remained stable.

[23]Unlinked Passenger Trips - the number of passengers boarding public transportation vehicles; a trip is counted each time a person boards a vehicle, even if it is a transfer.

URBAN TRANSIT SERVICE



Map 12

Source: GDOT - Office of Intermodal Programs

Rural Public Transit Systems

Today, Georgia's rural public transportation systems serve communities in 68 rural Counties and Cities statewide (see Map 13, page D-32). Service operations usually are "demand/response" operations[24], using small buses or minivans. Each rural public transportation system has at least one lift-equipped vehicle for transporting passengers with physical disabilities. Such transit service operations are more flexible and personalized than the fixed route/fixed schedule service standard in urban areas. The low density development and long travel distances between stops in rural markets lend themselves to a more flexible format. During 1992, the State's rural programs logged 4.5 million miles, an average of 22,092 miles per vehicle. Ridership reached 1.6 million annually; average passenger trip length was 2.9 miles.

Public transportation plays an important role in providing access to commercial, medical and business locations. In rural areas, where being without a car results in isolation, public transit service contributes to citizen participation in community affairs and to local economic activity. Without public transportation, local residents often pay a neighbor or friend for a ride to nearby regional urban centers, overlooking options available at the local county seat. Sales and other business leave the local area incurring a loss to local business. Public transportation is an important part of rural economic development strategies.

Rural public transportation systems operated 206 vehicles during 1992. Usually vehicles are replaced after 100,000 miles and five years. During the Statewide Transportation Plan's 20 year time span, approximately 1,000 replacement vehicles will be needed. As with the urban program, federal regulations in the Clean Air Act Amendments of 1990 and in the Americans with Disabilities Act will increase the cost of new vehicles purchased.

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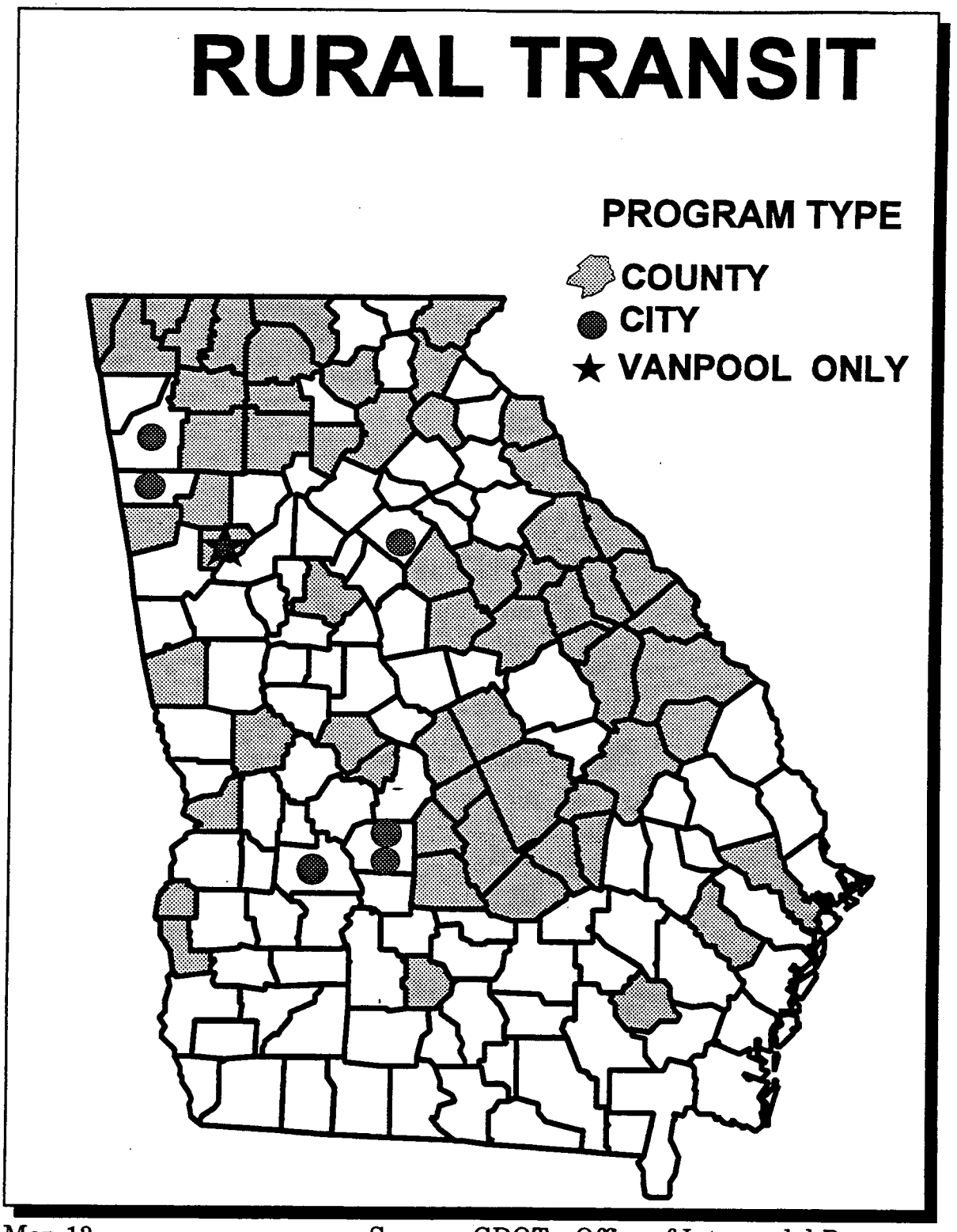
[24]Demand-response transportation system: a transportation system characterized by flexible routing and scheduling of relatively small vehicles to provide door-to-door, curb-to-curb, or point-to-point transportation at the user's demand." Source: Transportation Research Board, Urban Public Transportation Glossary, Washington, D.C. 1989, pg. 67.



Map 13 Source: GDOT - Office of Intermodal Programs

Elderly and Disabled Transportation

The Elderly and Disabled Transportation program is a federally funded transportation program managed by the Department of Human Resources (DHR) using funds allocated in Title III of the Intermodal Surface Transportation Efficiency Act. Federal funds provide for capital assistance only; the annual program budget is $1.6 million.

The Elderly and Disabled Transportation program is a small part of DHR's transportation system. Federal funds require a 20% match contribution; DHR provides the match amount from State general fund appropriations.

Intercity Bus Program

A study was completed in late 1994 of Georgia's Intercity Bus transportation service.[25] Recommendations will be evaluated by an Advisory Committee composed of public, private and departmental participants that will be called in 1995. Study recommendation have proposed possible state purchase of over-the-road coaches for intercity bus operations. If approved by the State Transportation Board, project implementation could begin during 1995. Only limited funds are available from ISTEA for Intercity Bus projects.

Rideshare and Vanpool Program

Ridesharing and vanpool programs will become increasingly important as a transportation management strategy. The Department has had a rideshare program since 1974, after the first Arab oil embargo. The Georgia Rideshare Program provides direction and technical assistance to assure that these commuter options are available on a statewide basis. The Georgia Rideshare program provides computer matching software, generic printed marketing materials and promotional information to cities statewide.

Ridesharing is an attractive option for many areas

[25]Georgia Department of Transportation, Intercity Bus Transportation in Georgia, 1994.

The program is being actively considered in the Atlanta area and may also be part of service options in other urban areas. Rideshare offers the advantage of transit service with operations paid for by the users. Development of the rideshare and vanpool alternatives holds promise for making more efficient use of the existing transportation system, reducing congestion and improving air quality.

The Atlanta rideshare effort is called the Commuter Options Program. Commuter options includes rideshare matching, carpooling, vanpooling, information on park and ride lots, telecommuting and public transportation. The need for effective management strategies makes this effort an important undertaking in the Atlanta area, currently in non compliance with the Clean Air Act Amendments.

A similar program is being actively considered in Augusta, Columbus and other urban areas statewide. The aim of commuter options programs is to make more efficient use of the existing transportation system by providing alternative choices to commuters. Both employees and employers can participate in the options programs, matching workers that live and work near one another into carpool, vanpool, public transit and other choices.

Vanpool programs usually follow one of three formats: individually owned, company owned or third party operated vanpools. By far the most popular in the Atlanta metro area is the third party operated vanpools that rely on a management company to administer the program. The third party operator charges a management fee to users to obtain the van, select and train the driver(s) and oversee operations of the program.

The telecommuting program is another option which allows employees to work away from the office. With the use of a computer, telephone and other equipment, work can be done at home without the need to travel daily to a central office. This option reduces the need to travel while providing the employee full access to office resources.

Park and Ride Lot Program

Closely related to the Rideshare and vanpool program is the park and ride lot program. There are 85 park and ride lots in Georgia's rural and urban areas. The facilities serve as staging areas for formation of carpools, vanpools and public transit. Persons may drive to these lots, park their vehicle for free, and then transfer to a carpool or vanpool for the rest of their commute (see Map 14, page D-36).

Use of the park and ride lots has been moderate to date, averaging 26% utilization statewide. However, use ranges widely, with some lots registering up to 161% of capacity (Washington County SR 57 & SR 68). As public transit use and ridesharing increases, the park and ride lots will facilitate use of alternate modes.

Some MARTA lots have been designed to accommodate bus service. A majority of lots statewide were designed as staging areas for carpools and vanpools.

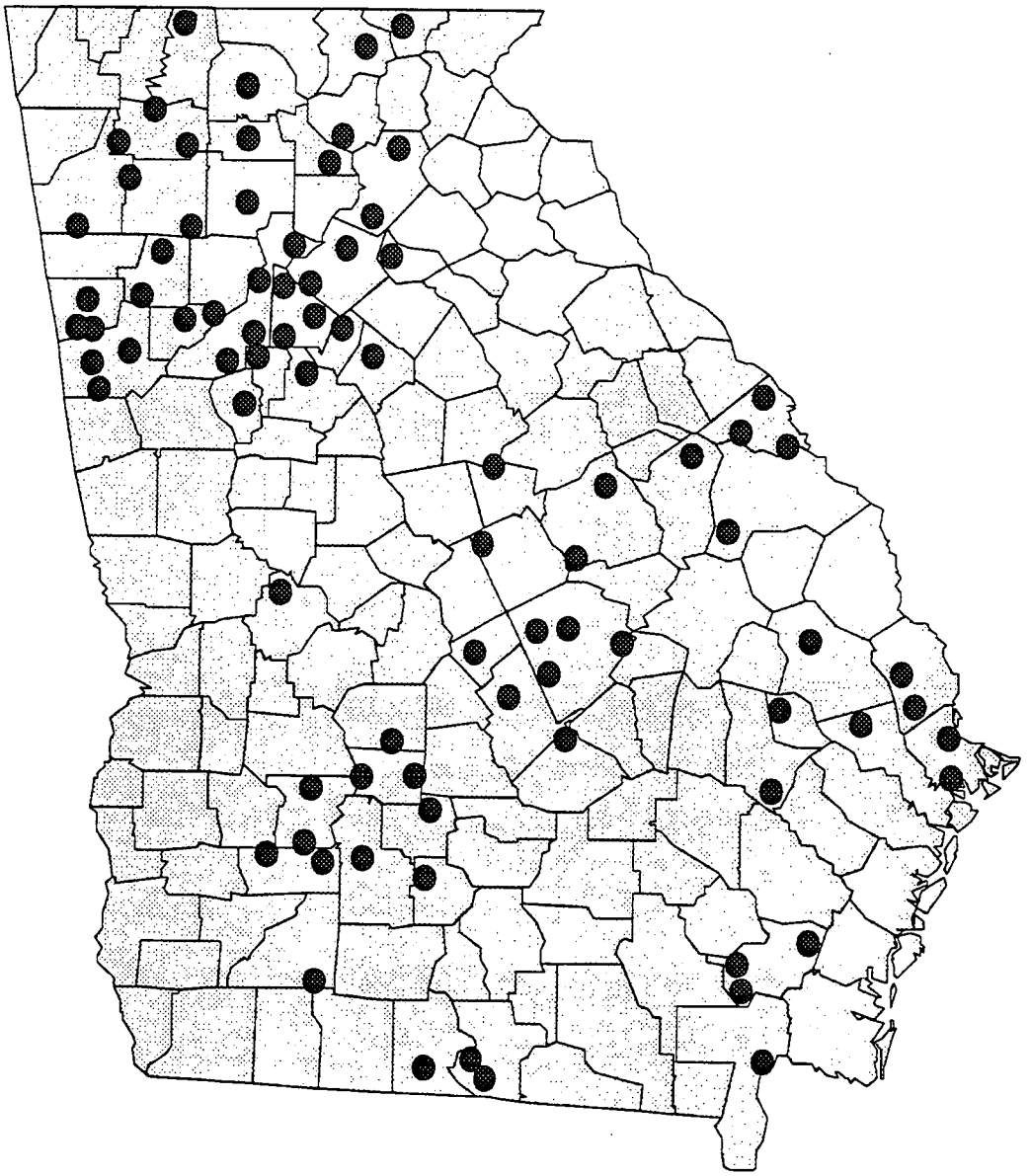
85 Park and Ride Lots Statewide

Generally, the Department does preliminary engineering design and assists in financing the costs associated with the construction of lots. GDOT also provides signing to the lots. Signing is also used to market the Georgia Rideshare Program and publicize a dedicated rideshare phone number (656-POOL). Local governments agree to maintain the lots, provide routine security patrols, pay for energy used for lighting, as well as manage the operation of the park and ride lot.

Prospects for Future Use

The need for a pro-active public policy to encourage public transportation service is evident. More efficient use of the highway system depends on increasing passenger carrying capacity. Initiation of public transportation operations is a local decision, but state programs encourage local interest in choosing public transportation options.

PARK & RIDE LOT FACILITIES



Map 14

Source: GDOT - Office of Intermodal Programs

There is potential for new urban public transportation programs in several areas statewide. In the Atlanta area, many suburban counties will need to seriously address public transportation. Statewide, there are cities with substantial population that need to look closely at public transportation.

In addition, the need to expand rural public transportation is important. Rural public transportation enhances the economic viability of rural areas and supports access to social services. Mobility to jobs is as important as mobility to social services; rural public transportation can serve the mobility needs of both types of demands.

Funding for Public Transportation

Federal funding for public transportation is expected to grow slowly. Costs associated with the operations of transportation systems are increasing rapidly (in part the result of unfunded federal mandates such as the Clean Air Act Amendments of 1990, the Americans with Disabilities Act, drug and alcohol testing, etc.); funding is a critical issue. New funding sources must be identified to finance costs of transit operations and to expand rural and urban public transportation programs. Annual expenditures for social service transportation alone could cost about $400 million[26] over the next two decades. The need to expand public transit statewide is urgent.

Current Funding for Transit

Transit capital purchases and operations are financed with federal, state and local funds. State funding is limited to financing one half of the local share of capital, marketing and planning programs. There is no state participation in the funding of operating assistance. Projections show a shortfall of federal funds to replace capital equipment and to finance operations. Sufficient funds to expand the public transportation programs into new areas are currently not available from existing sources.

[26]Estimate is based on DHR costs of $20 million per year over the next 20 years.

Proposed Funding Programs

Increased commitment by the state to unified public transportation services will require increased funding of capital and the establishing a program for participating in operating needs. Funding of the public transit program should be considered part of a comprehensive strategy to address the need for both public and social service transportation. Public transportation is important to improving the quality of life and the human resources available in Georgia. The success of those programs is directly related to creating a better living environment for all citizens statewide. Statewide public transportation is key to the success of social service programs and it contributes to rural development. Unified public transportation services is a central strategy to economic development and quality of life.

KEY POINTS:

- Public transportation is important to mobility statewide. Transit service can contribute to more efficient operations of the existing road system.

- Greater use of public transportation services is an attractive option for increasing mobility and addressing environmental concerns.

- The social service programs depend on public transportation to provide their customers access to services.

- Public transportation should be available statewide. It should also be considered for its role as an economic development tool for local areas. Access to jobs, medical services, retail and other activity centers, by individuals that would otherwise not have access, is important to the local economy and quality of life.

- Support in the development and long term maintenance of public transportation programs will require new funding sources be identified.

MODAL PROFILE:

Railroads

THE ROLE OF RAILROADS

The Georgia Railroad System consists of approximately 5,000 route miles. Two major freight railroad companies, CSX Transportation and the Norfolk Southern Company own and operate 80%, about 4,000 miles, of the total state system. The remaining 20% is operated by 10 independent or shortline operators[27].

The rail lines are classified according to average tonnage of freight carried annually. 'Light Density' rail lines carry less than three million gross tons of freight per year and serve as local service operators, primarily in rural agricultural areas. About 1,900 miles of rail line, (40%) of the rail system, is classified as 'light density'. The remaining 3,000 miles of the rail system are classified as 'mainlines' and form the core routes of the Georgia Railroad System. Some Georgia mainlines transport more than 40 million gross tons per year, ranking them among the most heavily used in the country[28].

Georgia's Railroad System is important to the transportation of many heavy, bulk commodities. Coal, stone, clay, forest and chemical products are the major users, accounting for 70% of the total freight traffic. However, intermodal freight, transported in containers or trailers, is becoming a larger part of the railroad's business and is expected to continue to experience steady growth in future years. Rail shipments are expected to grow at a rate of 2% to 3% annually into the future, except intermodal shipments expected to grow 10% annually[29].

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[27]Georgia Department of Transportation, Georgia State Rail Plan, 1980.

[28]Ibid

[29]Georgia Department of Transportation, Georgia Rail System Evaluation, 1989.

The Georgia Railroad System moves over 100 million tons of freight into and out of the State annually[30]. Major industries in the State depend on railroads to provide efficient, economic transportation. For Georgia's rural businessman and/or farmer, railroads provide an option in the domestic freight transportation market dominated by trucks.

Rail Passenger Service

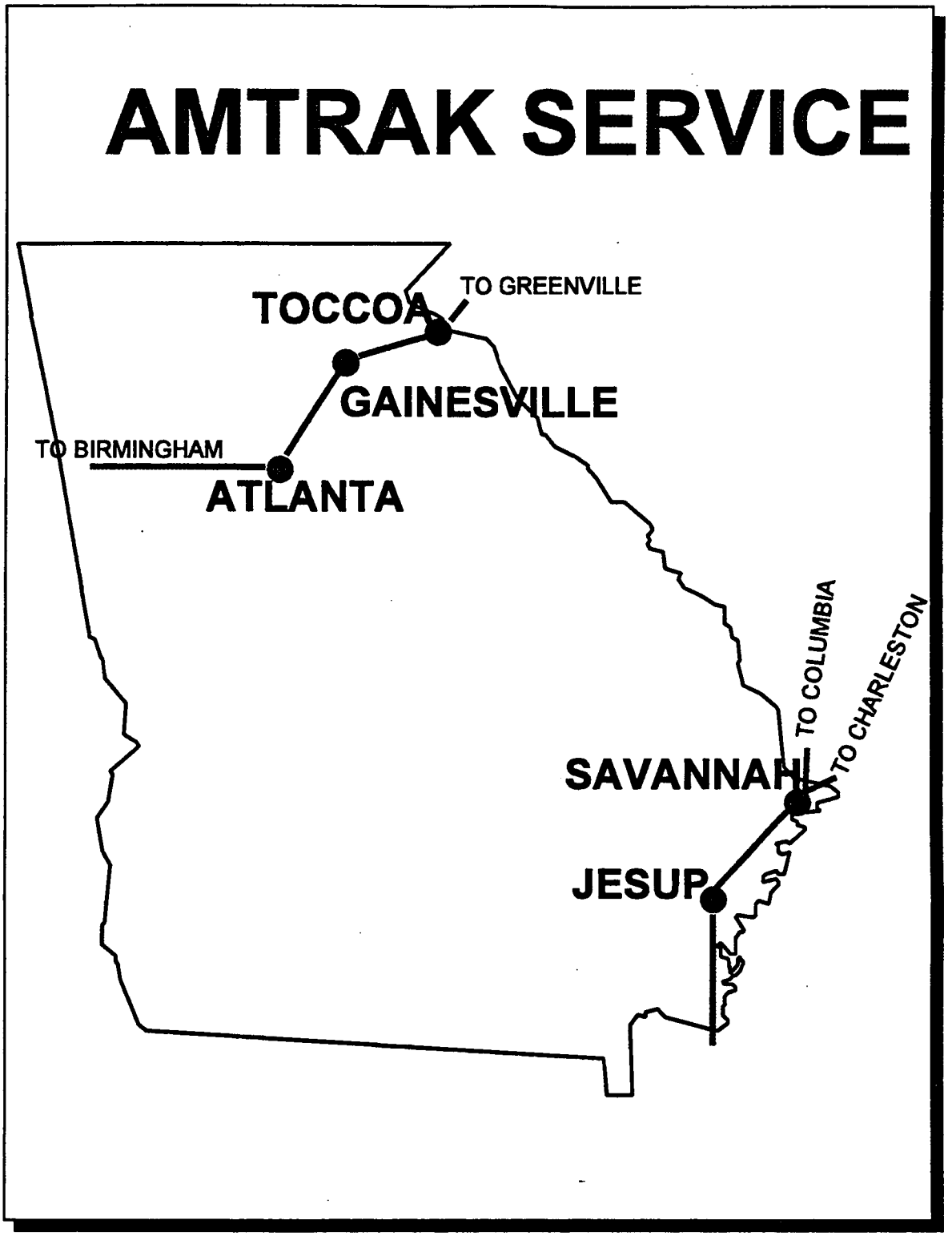
The Georgia Department of Transportation is taking an active role in developing plans and programs for future passenger rail service to increase the mobility of Georgia citizens and visitors. Currently intercity rail passenger service in Georgia is operated by the National Railroad Passenger Corporation or AMTRAK, traveling over the rail lines of freight railroads. AMTRAK provides scheduled passenger service to over 200,000 riders annually in Georgia (see Map 15, page D-41). The AMTRAK service facilitates access to areas of Georgia without air carrier service, providing service for long distance travel at reasonable prices. AMTRAK service is an economic alternative to the traveling public.

Over 200,000 Georgians use AMTRAK annually

AMTRAK trains serving Georgia include:

- The Crescent, operating between New York and New Orleans with stops in Georgia at Atlanta, Gainesville and Toccoa. Georgia ridership for this train in FY 1993 totaled 124,158.
- The Palmetto, Silver Meteor, and Silver Star, operate between New York and points in Florida, with stops in Georgia at Savannah and Jesup. Georgia ridership on these trains in FY 1993 totaled 75,299.

[30]Georgia Department of Transportation, Georgia Rail System Status Report, August, 1993.



Map 15 Source: GDOT - Office of Intermodal Programs

AMTRAK studied re-instituting rail passenger service from Chicago to Florida in 1991 (this train was once called the Floridian). The study examined various routes for the service but did not identify a preferred route. The State is currently sponsoring a study of the potential demand for this Floridian service in Georgia as a part of a multi-sate consortium formed to continue the effort to re-establish the Floridian route.

AMTRAK's original estimates for the seven state Floridian corridor was $200 to $230 million for train equipment, stations and track improvements; annual operating cost of $38 to 42 million and an expected deficit of $18 to $21 million annually. The Georgia portion of the Floridian route would provide service through the center of the State. Depending upon final route selected, the cities of Atlanta, Macon, Rome, Cartersville, Waycross and Valdosta could receive service by the new train. The potential for intercity rail passenger service should not be underestimated. Growth rates in intercity rail passengers in Georgia have registered 1% to 2% increase annually, even with the minimal level of service available. AMTRAK trains in Georgia are routinely operating at capacity due to a shortage of equipment; AMTRAK currently does not have sufficient funds for additional rolling stock. Without additional equipment to increase scheduled service, intercity rail ridership growth for Georgia cannot not be expected.

The State has also sponsored an Intercity Rail Passenger study to further consider routes statewide, to select a potential network serving the major centers of the Sate and to quantify potential ridership, revenues and costs of service start up. The study results will help to rank potential intercity rail initiatives, including the Floridian route.

Commuter Rail Plan

A Commuter Rail Plan has been developed to introduce commuter rail service in north Georgia and the metropolitan Atlanta area. The Commuter Rail Plan considered 12 existing[31] freight lines for passenger service and selected six (6)

[31]Georgia Department of Transportation, Georgia Commuter Rail Plan, (DRAFT), January, 1995.

routes to downtown Atlanta business areas for commuter railroad trains (see Map 16, page D-44). The Study included an identification of corridors, priorities, potential station locations, operating plans, ridership and revenue estimates, physical improvements required, capital costs and economic impacts.

Commuter Rail Plan proposes using existing rail lines for passenger service

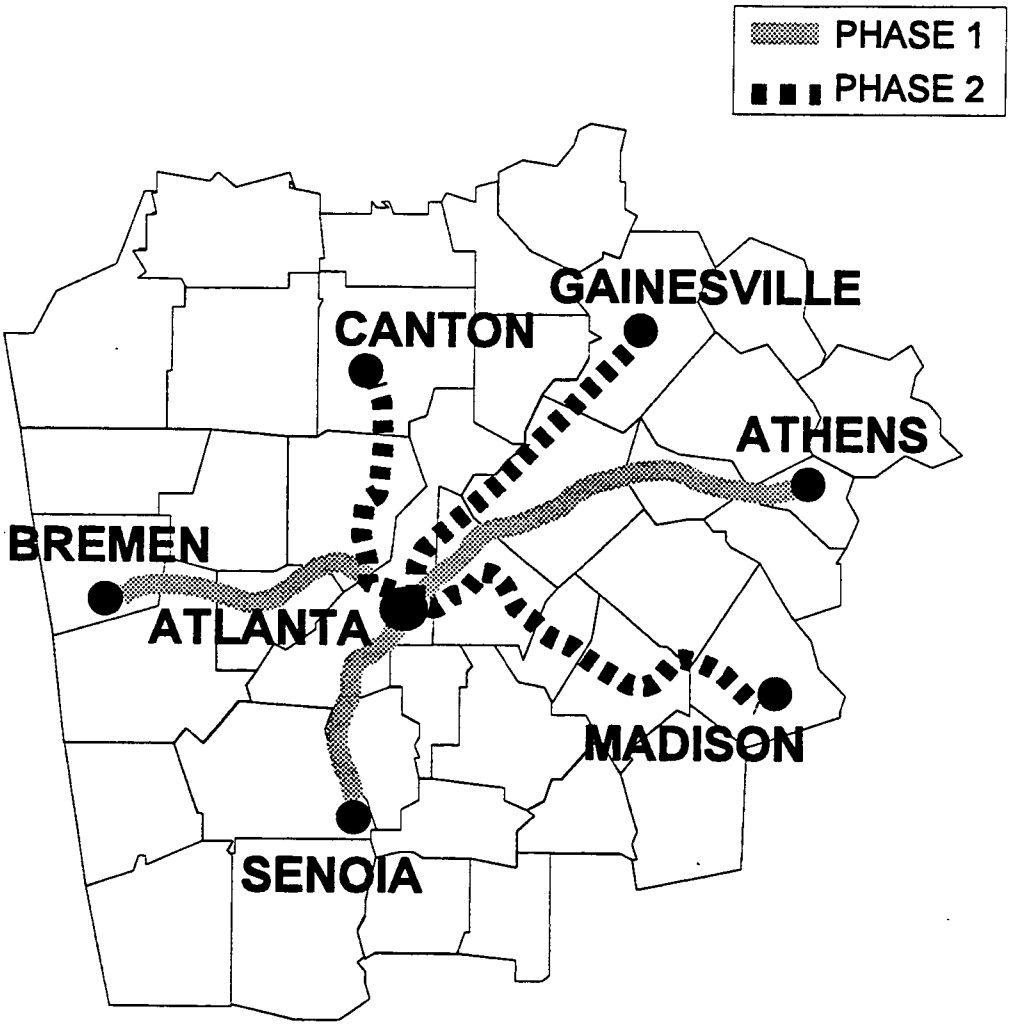
Commuter rail is recommended in six (6) Northern Georgia rail corridors. A two-phase staging plan will allow implementation of service on three (3) corridors by 2000 and an additional three (3) corridors by 2010.

Phase 1 includes service to Athens, Senoia and Bremen on three (3) lines with 20 stations and one (1) downtown transfer station:

> Service to Athens would include station stops at Emory, Tucker, Lilburn, Reagan Parkway, Lawrenceville, Dacula, Winder and Bogart in Fulton, Dekalb, Gwinnett, Barrow, Oconee and Clark Counties.
>
> Service to Senoia would include station stops at East Point, Red Oak, Tyrone and Peachtree City in Fulton, Fayette and Coweta Counties.
>
> Service to Bremen would include station stops at Mableton, Austell, Douglasville, Villa Rica and Temple in Fulton, Cobb, Douglas, Carroll and Haralson Counties.

Phase 1 requires an estimated capital investment of $218 million for rolling stock, facilities and line improvements, and annual operating assistance of approximately $10 million per year.

COMMUTER RAIL STUDY CORRIDORS



Map 16

Source: GDOT - Office of Intermodal Programs

Phase 2 includes service to Madison, Gainesville and Canton on three (3) additional corridors, with twenty-two (22) additional stations servicing six (6) additional counties:

Service to Madison would include station stops at Avondale, Stone Mountain, Lithonia, Conyers, Covington and Social Circle in DeKalb, Rockdale, Newton, Walton and Morgan Counties.

Service to Gainesville would include station stops at Lenox, Norcross, Duluth, Suwanee, Sugar Hill and Oakwood in Fulton, Gwinnett, and Hall Counties.

Service to Canton would include station stops at Cumberland Mall, Marietta, Sandy Plains Road and Holly Springs in Cobb and Cherokee Counties.

Phase 2 requires additional capital investment of $263 million for rolling stock, facilities and line improvements and additional annual operating assistance of $8 million.

When fully implemented, the Commuter Rail Plan includes service at 40 stations in 18 counties with an estimated year 2010 population of 4,213,330 which is expected to be more than 50% of the year 2010 State of Georgia population. In current dollars the cost of the overall plan for 2010 levels of ridership is $481 million with annual operating support of $18 million per year.

Commuter Rail Plan recommendations are staged over a 20 year period

The Commuter Rail Plan proposes service powered by diesel passenger locomotives:

- Passenger cars would be bi-level with high capacity, comfortable seating on both levels. Handicapped accessibility would be provided by mini-high platforms at the end of regular platforms.
- Each corridor would have three (3) morning and three (3) evening peak period trains. Mid-day and late evening service would also be provided on each corridor for commuters with flexible schedules.
- Stations would be easily accessible from a variety of other modes. Parking will be provided at stations for a high percentage of passengers to avoid constraints on the system use.
- Tickets would be sold from vending machines at outlying stations and manned ticket windows at the downtown transfer station. One-way, round trip, weekly, and monthly ride tickets would be sold and mail service would be available for regular monthly purchase. Credit and debit cards would be accepted.
- Typical daily one-way commuter fares would range from $1.50 at close-in stations such as Emory to as much as $5.50 at the farthest stations such as Madison.

The progressive expansion of urban areas into suburbia and the limited potential to add highway capacity makes commuter rail an attractive method of supplying commuting travel service. In addition, as the search for solutions to congestion, energy efficiency and air quality issues becomes more acute, commuter rail offers a low pollution and energy efficient option for urban areas. The needs of the freight railroad owner/operator and their increasing freight traffic will require improvements to track and signal systems before passenger service can be initiated.

Around the country, commuter rail operations have experienced an increase in ridership averaging 10% to 20% over the past five years. New commuter rail operations have recently been started in Southern California, Connecticut, Northern Virginia, and South Florida. Major improvements and expansion is taking place in Boston, New York, New Jersey, Philadelphia, Chicago, San Francisco, Baltimore, and Washington, D.C. Plans for new commuter rail services are being considered

in Seattle, Cleveland, Dallas, Detroit, Fort Worth, Vermont, Houston, St. Louis and Kansas City. Typically commuter rail systems recover 40% to 60% of their operating costs from ticket sales. Financing of commuter rail will require an initial capital investment and continued operating support. Although there is no specific source of federal funding for commuter rail projects, most of the commuter rail projects in other states have been funded with a combination of formula or discretionary federal funds from the Federal Transit Act, State and local funds.

It is understood that commuter rail operations would be carried out in cooperation with the owner / operators and would be done without negatively impacting freight operations. In order for commuter rail to be successful, schedules and reliable service will need to be made attractive to potential passengers. The more attractive the service becomes, the greater the effort necessary to coordinate joint use of railroad lines.

Maintenance of rail corridors is a concern

Physical Condition

The physical condition of the rail infrastructure is a substantial issue. Maintenance continues to be a major financial concern for the railroad companies. While the main lines in the State are in good to fair condition, the branchline system is in poor condition. The condition of the rail lines impacts both the rail passenger and rail freight service. AMTRAK intercity rail passenger operations depend on CSX and Norfolk Southern to maintain the track to a level sufficient to support the safe operations of rail passenger service.

Physical condition becomes all the more important as rail traffic grows. The core routes of CSX and Norfolk Southern are operating close to capacity as a result of the downsizing of the railroad system and operating efficiencies instituted to lower cost. Traffic is expected to grow in the future and the lack of capacity will dampen the potential for growth. Shortline operations have been seriously impacted by capacity problems, primarily due to poor track and deferred maintenance. Identification of funding is needed to rehabilitate and maintain the rail branchline

system statewide over the next 20 years. In addition, a program of branchline acquisition to provide for purchase of light density lines to preserve rail service is critical.

Rail corridor preservation is another element of the rail improvement program. Preservation of abandoned corridors protects the right of way for future development as a transportation facility, which might otherwise be lost. Rail corridor preservation over the next two decades is critical to safeguard the continuance of this transportation option along abandoned rail corridors. The value of the rail corridor preservation program is especially important in urban areas where the pressure to develop has resulted in the lost opportunity for important improvements. Failure to implement an effective and substantial rail program will adversely impact rural economic development.

Coordination

The railroad industry is a private sector operator of transportation. As the State's transportation programs are fully defined and prepared for implementation, special efforts need to be made to coordinate with the railroads in the transportation planning process. This same coordination function should be continued as programs are implemented, monitored and evaluated.

KEY POINTS:

- Georgia has an excellent system of mainline railroads that support national freight movements. The branchline rail system needs additional investment.

- Funding the shortline track maintenance and rehabilitation needs will be critical to the future success of the state's rail program.

- The state rail system continues to experience downsizing by major railroads; 500 miles of rail line are expected to be sold to shortline operators in the near term[32].

[32]Georgia Department of Transportation, Georgia Rail System Status 1993.

- There is broad public support for rail service, especially rail passenger service.

- Future expansion of AMTRAK service will require additional funding.

- The future of rail passenger service will depend on our abilities to identify a stable source of funding.

MODAL PROFILE:

Aviation

THE ROLE OF AVIATION

The aviation program is a key factor in the State's economic development strategy. With the acceleration of world trade and the demand for speed and efficiency, aviation has come to the forefront as a vehicle for shaping the State's future economic opportunities. The Governor's Council of Economic Development Organizations and the Growth Strategies Commission placed emphasis on aviation as a stimulus for economic growth. The impact of aviation in the State of Georgia extends far beyond the airports themselves. Manufacturing, financing, distribution, construction, real estate, hospitality and a host of other areas in the economy are dependent upon efficient and dependable transportation.

The Georgia airports accounted for $8.4 billion in economic activity. Aviation employment in 1992 provided 110,000 jobs in Georgia's general aviation airports, and commercial service airports, including Hartsfield International. By every measure, aviation is a major economic generator, important to the continued prosperity of Georgia.

Transportation planning for Georgia's system of air carrier and general aviation airports must continue to anticipate growth and take advantage of opportunities created by the international markets. In recent times, the aviation market has undergone many dramatic changes in demand and activity patterns. To prepare for aviation's role in the future, the Department initiated development of a Statewide Aviation System Plan. The two-year project, begun in 1993, will provide guidance and direction in development of the State's air carrier and general aviation system of airports and provide comprehensive information on aviation's economic impact.

The Georgia Statewide Aviation System Plan will determine the extent, type, nature, location and timing of airport development needed in the State to establish a viable, balanced and integrated system of airports. Georgia's Plan will develop a program of current and future prioritized development needs. Using strategies developed in

the Georgia Statewide Aviation System Plan, the state will be better able to assume a proactive role taking advantage of aviation opportunities.

The following contains information from Phase I of the Plan - findings and recommendations for Air Carrier and Air Cargo improvements.

Georgia's Airports

Airports have a tremendous economic impact on the statewide economy. The availability of international access has attracted some of the state's most prized corporate citizens. Often, the Atlanta airport was the single most important factor leading to a corporate decision to locate in Georgia. Direct economic benefits of Hartsfield Airport are estimated at $2.8 billion direct benefit and $4.2 billion indirect benefit[33].

Georgia's airport system consists of 291 airports; 110 are open to the public, 175 are limited to private use and six are military fields for use by the Armed Forces. Of the 110 airports open to the public, only seven are privately owned. The balance is owned and operated by local governments and authorities.

Georgia's aviation industry generated 110,000 jobs

The state's major air facility is Atlanta's William B. Hartsfield International Airport. Hartsfield is owned and operated by the City of Atlanta and services national and international travel with daily air service to over 180 cities including 22 international destinations.

Savannah International Airport also services international markets. Savannah International recently opened a new terminal facility on the north side of the airport.

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[33]Deloitte Haskins Sells, Hartsfield Atlanta International Airport Economic Impact Study, April, 1987.

AIR CARRIER SERVICE

Map 17 Source: GDOT - Office of Intermodal Programs

Av Atlantic, a charter airline, offers international flights to the Caribbean from Savannah.

Atlanta's William B. Hartsfield International Airport

Hartsfield is served by 40 scheduled airlines (passenger and freight). Hartsfield Airport draws passengers from all over the state and a substantial number from out of state. To maximize the airport's potential, a fifth runway for commuter aircraft is being pursued. The new 6,000 foot runway will be located south of the existing complex, inside Interstate 285. Hartsfield has completed a new International terminal with 24 gates and space for 10 additional gates in the future. Projections indicate Hartsfield traffic will exceed capacity, even with the addition of a fifth runway.

The Atlanta airport's international service affects more than just passenger service. Hartsfield handled approximately 730,000 tons of cargo in 1993. Air freight cargo is the fastest growing area in transportation. With increased emphasis on international trade, air cargo is forecast to increase market share. Cargo traffic at Atlanta is expected to double by 2012. Hartsfield's newest cargo facilities include the North Cargo Building, the Atlanta Perishables Center, the Atlanta Equine Center and the General Purpose Foreign Trade Zone.

Other Air Carrier Airports

Scheduled air carrier activity is provided at eight other Georgia cities besides Atlanta. Albany, Athens, Augusta, Brunswick, Columbus, Macon, Savannah and Valdosta also have scheduled air carrier service (see Map 17, page D-52). Together, the air carrier airports handle 48.9 million airline passengers each year. The eight commercial service airports had an economic impact of $1.4 billion[34] and accounted for 18,400 jobs[35] in 1992.

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[34]Wilbur Smith Associates, Georgia Statewide Aviation System Plan, Phase I - Air Carrier/Air Cargo, June, 1994.

[35] Ibid.

The 103 open to the public, and publicly owned[36] airports have a total of 141 paved runways. Length of the runway correlates to the level of aircraft served. The following profiles airport runways statewide:

- 40 public airports (36%) have runways of 4,000 feet or less
- 21 public airports (19%) have runways over 4,000 feet but less than 5,000 feet
- 49 public airports (45%) have at least one runway 5,000 foot in length or greater, permitting take offs and landings by larger aircraft.

Through the annual airport inspection program, the Department inspects the approaches for each runway to assure they meet state and federal standards. Paved surfaces are inspected to evaluate the need for runway rehabilitation and routine maintenance. The surface conditions of these runways vary from excellent to poor. Taxiways and aprons fall into the same category of condition as runways.

Twenty years ago, a community's basic airport needs required only a 3,000-foot runway with minimum instrumentation. Today, for larger, faster and more sophisticated aircraft, a minimum of a 4,500 foot to 5,000 foot runway is preferred. About 80 of the airports in the state have instrument approaches to provide all weather access; 97 airports have at least one lighted runway for night operations.

General Aviation

In the Atlanta area, ten (10) general aviation airports have been designated by the FAA as "Reliever" airports for Hartsfield. The designation of "Reliever" identifies the airport as an alternate landing area for general aviation traffic. This provides more general aviation access to the general community. Reliever airports in the Atlanta area are:

• DeKalb	DeKalb-Peachtree Airport
• Fulton	Fulton County Airport
• Cartersville	Cartersville Airport
• Covington	Covington Airport
• Gainesville	Lee Gilmer Airport
• Hampton	Clayton County Airport/Tara Field

[36]NB. An additional 7 airports in the state are open to the public, but privately owned.

- Lawrenceville — Gwinnett County/Briscoe Field
- Marietta — Cobb County/McCollum Airport
- Newnan — Newnan-Coweta County
- Peachtree City — Falcon Field

General aviation airports house over 6,000 aircraft statewide; 82% of that total is at public use airports. They also accommodate over 8,000 daily aircraft operations. Many aircraft are owned by individuals (55%), multiple ownership accounted for 41%, air carriers and government own 2% each. Overall, Georgia has 2.4% of all the aircraft registered in the United States.

State Programs

State programs have provided financial support to local government airport programs. The four programs which form the State aviation efforts are:

- Airport Development Program

  Financial assistance is provided to supplement local and federal funds for capital improvement projects at publicly owned airports. The program finances one half of the non-federal share for new construction and other eligible items. The Department may provide funding for one-half the cost of items for which federal funds are not available.

Airports attract business to Georgia

- Airport Operations Improvement Program

  Financial assistance for major maintenance and items affecting safety at publicly owned airports are included in this program. The program will fund 75% of overlays to runways, taxiways and aprons; crack seal of runways, taxiways and aprons, rehabilitation of lighting systems and approach aids; clearing of approaches to runways; construction of extended runway safety areas and airport marking.

- Airport Approach Aid Program
  This program provides funds for the acquisition and installation of navigation aids at airports where federal assistance is unavailable. Eligible items consist of radio beacons, marker beacons, localizers, approach lights, distance measuring equipment, and automated weather stations. Funding for this program is 75% state funds and 25% local.

- Aviation Planning
  Financial assistance is provided for one half of the non-federal share for air service demand studies, Part 150 noise studies, airport master plans and airport layout plans. This is in addition to technical assistance provided by the Department facilitating liaison with the Federal Aviation Administration. The Department inspects and licenses public use airports not certificated by the FAA. The State Aeronautical Chart and the Georgia Airport Directory are part of this program serving the aviation community.

Funding

Federal funding for aviation does not flow through the Georgia Department of Transportation. Airport planning and development grants are provided to local governments directly by the Federal Aviation Administration (FAA). Federal funding is discretionary; airports with less than 20 based aircraft, although eligible for federal funds, are not competitive by FAA criteria and therefore receive little if any FAA funding. There are 49 airports in the State that are not competitive within the federal priority and are dependent on the Department for support. State funds for aviation use come from the State General Fund.

The Georgia Statewide Aviation System Plan has shown the need for air service improvement for the existing airport system. Improvements would bolster the level of passenger enplanements at the eight air carrier airports statewide. The potential for new commuter service at five new locations may be a new market opportunity. Areas for further evaluation for commuter air service are Bud Barron Airport in Dublin, Douglas Municipal Airport in Douglas, Souther Field in Americus, Habersham County Airport in Cornelia and Richard B. Russell Airport in Rome. Forecasts suggest that these airports will develop air carrier passenger demand

levels ranging from 25,000 to 60,000 enplanements annually within the State's 20 year planning time frame.

The Georgia Statewide Aviation System Plan recommended additional air carrier capacity in the Atlanta service area as a result of increased demand from originating and terminating passengers. Additional capacity will also be important to support future air cargo development.

KEY POINTS:

- The Georgia Statewide Aviation System Plan will be completed in another year. The results will be incorporated into the Statewide Transportation Plan.

- The Aviation System Plan to date has evidenced the need to expand the aviation program in Georgia as a means of supporting economic development and participating in the global market place.

- The Georgia Statewide Aviation System Plan's preliminary results indicate that failure to provide needed capacity improvements would mean $4 billion in lost economic opportunity by 2012. Future funding will be a major challenge to achieve an effective state airport program.

MODAL PROFILE:

Ports

THE ROLE OF PORTS

Deepwater ports at Savannah and Brunswick are the nucleus of Georgia's growing and vital international trade. Timber, agricultural commodities, chemicals, minerals, carpet and other products make their way to markets around the world from Georgia Ports. These are also the entryways into the Southeast for goods sold all over the United States; automobiles, machinery, fruits and vegetables and other products arrive through the Ports at Savannah and Brunswick.

Approximately 90% of international trade is waterborne; trade through the ports has generated over $7 billion annually in business activity. The ports and supporting businesses employ 63,000. Business continues to grow at the ports; ports cargo tonnage will be over 9.1 million tons. Breakbulk cargo, such as minerals and grain will increase at a moderate ratio of 2% to 3% annually. Exports of forest products and kaolin (which presently make up 75% of the breakbulk cargo tons) will increase about 3% annually.

Intermodalism has played a key role in the success of the Ports. To ease intermodal connections, the Department will issue permits for containers over the legal limit up to 100,000 pounds, if they have an international bill of lading and a Port origin or destination. The Port of Savannah is serviced by several intermodal connections - two rail lines, an international airport and two Interstate Highways (I-16 and I-95). Brunswick also has access to rail lines, a state airport and Interstate 95.

Port History

Savannah was founded in 1733 by James Edward Oglethorpe. Since early times, the Port of Savannah has facilitated intermodal linking of sea cargo to landside transportation. Trends in shipbuilding have produced larger sized vessels, which draw deeper drafts and thus require a deeper channel for safe navigation. The economic importance of the Savannah Harbor to the State resulted in public

investment decisions to replace the Talmadge Bridge, and deepen and widen the Harbor channel. The Ports of Georgia hold an important position in the State's transportation matrix and will continue to be a focus for future economic development.

Brunswick Port was established by Oglethorpe in 1736. The deep-draft terminal facilities at the Port of Brunswick include 27 piers, wharves and docks. Maintenance of the channel is the responsibility of the U.S. Corps of Engineers dredging the interior channel to a depth of 30 foot MLW (mean low water).

Port Strategic Planning

The Georgia Ports Authority (GPA) recognized a need to maintain its competitive position. As a result the GPA developed a ten-year growth program called FOCUS 2000. The GPA's strategic plan carefully considered trends in future demand for port services, competition from other East Coast ports, technological innovations and world trade market opportunities. It identified the need to add more capacity at Savannah's container port and to the warehousing facilities at Brunswick's Major Point Terminal. FOCUS 2000 recognized the need for upgrading or replacing several existing berths and container cranes used to shuttle 20 and 40 foot long containers from ship to shore.

PORTS-

Generate 63,000 Jobs

The strategic plan first identified the need to deepen the Savannah Harbor to ensure the Port's ability to handle larger cargo vessels; the harbor's depth was increased from 38 feet to 42 feet and the width of the channel was increased to 500 feet. Improvements recommended by FOCUS 2000 will generate Port activity and produce a total annual economic impact of $6.6 billion including $189 million in state and local taxes. The Port of Savannah generated $215 million in federal custom duties in 1988, there was $23 million collected at the Port of Brunswick, during 1988 in federal custom duties.

Improvements to the Port of Brunswick will include replacement of the Sidney Lanier Bridge and expansion of berthing and storage facilities at Major's Point Terminal. The Bridge has been declared a hazard to navigation and replacement is underway. Additional improvements proposed by the U.S. Corp of Engineers include deepening and widening the channel to facilitate access to the port.

Replacement of the Sidney Lanier Bridge will open development at the Port of Brunswick. At the Colonel's Island site, the Port has located a versatile auto importing and exporting terminal. General Motor's Saturn Division recently began shipping its American made cars overseas from Brunswick. Automobile manufacturers importing vehicles through Colonel's Island include Mitsubishi, Hyundai, Lexus, SAAB, Toyota and Volkswagen Audi. Auto cargo at Colonel's Island will continue to grow if entry to the Port can be made easier and safer by the bridge replacement.

The bridge has been declared a hazard to navigation under provisions of the Truman Hobbs Act. In the past two decades, the Sidney Lanier Bridge has been struck twice and eleven lives lost. Replacing the bridge will alleviate the danger of ship collisions, increase safety for the traveling public and enhance opportunities for development of the Port of Brunswick.

Tri-Rivers Ports at Bainbridge and Columbus

The Georgia Ports Authority has river barge terminals in Bainbridge and Columbus. There have been substantial increases in tonnage with 74 barges calling on the terminals in FY 1993. The terminals are located on the Appalachicola / Chattahoochee / Flint or Tri-Rivers Inland Waterway. The Bainbridge terminal is located on the Flint River and the Columbus terminal is located on the Chattahoochee River.

Most of the traffic to these ports is bulk products from the Midwest going to the Gulf of Mexico. Nitrogen solution, anhydrous ammonia and fertilizer are the main cargo into Bainbridge; caustic soda and jet fuel are handled at the Columbus terminal. The facilities are limited with docking space for two barges at Columbus, while Bainbridge has 400 linear feet of berthing space.

Savannah Ports Activities

One of the most challenging intermodal projects the Department of Transportation has tackled to date is that of developing a long range intermodal strategy that addresses the rail/highway conflicts at the Savannah Port gates. Competition for Port access has created truck / rail modal conflicts that spill over into the neighborhoods of Port Wentworth and Garden City causing congestion and delays.

The Ports are truck and rail dependent; goods are brought in and taken out using these two modes. Increasing traffic has overtaxed limited infrastructure in the area, pointing to a need to develop a strategy for consolidation of rail yard and terminal operations. A proposal has been made to develop an intermodal terminal company to serve all port users, consolidating rail yard operations and removing excess rail yards and tracks from residential neighborhoods. The terminal company would interface with port terminals and mainline railroad operators, removing many current restrictions to rail access and accommodate future port needs.

An additional benefit to an intermodal terminal is that sufficient capacity could be developed to accommodate future port expansion needs. The intermodal terminal would be designed to service railroads, and would be accessible to all port operators. Implementation of a terminal company can only be accomplished with the cooperation of the principal railroads.

Maintenance of the Savannah Harbor

There are 45 piers and wharves to serve the existing waterborne commerce at Savannah. The Georgia Ports Authority operates three facilities in Savannah: LASH (Lighter Aboard Ship) facility, the Garden City Terminal and the Ocean Terminal, taking up 20 berths. The remaining 25 berths are operated by 20 independent companies. These facilities, with the use of dolphins (a cluster of piles), have a combined berthing space of 30,154 feet; five berths are equipped with container facilities.

Maintenance of the Savannah harbor is a joint responsibility of Chatham County and the U.S. Army Corps of Engineers. Under Federal law, the Local Assurer, that is Chatham County, is responsible for acquisition of lands, easements, and right of

way for disposal areas. The Local Assurer is required to provide the dikes, weirs, bulkheads, embankments and outfalls associated with containment areas. They are also required to provide all lands, easements and rights-of-way for the disposal areas of shoal material.

PORTS- Cargo movements depend on Intermodal transportation

The Department of Transportation helps Chatham County in financing the responsibilities associated with its role, through State General Fund allocations and State Revenue Bonds. An average of $3 million of state funds are spent each year to improve and maintain the disposal areas. Chatham County lets the contracts, constructs major dike projects and performs the daily maintenance required for the disposal areas. The disposal areas for Savannah Harbor consist of 5,814 acres surrounded by 44 miles of earthen dikes.

Dredging activities maintain the Harbor's outer and an inner channel. The outer channel is approximately 11 miles long, 600 foot wide and 44 feet MLW deep. The material dredged from the outer channel is directed to an offshore open ocean disposal area. The inner channel, which begins near Ft. Pulaski is approximately 21 miles long, with seven turning basins. Dredged materials from these areas are put into upland confined disposal areas.

The depth of the channel at the Port of Savannah in 1733 was 15 feet MLW (mean low water) when it was founded. The current depth of 42 feet MLW is maintained through annual dredging of seven to eight million cubic yards of shoal material - approximately the equivalent in size of a football field (300 ft. by 150 ft.) piled 0.8 miles high. The U.S. Corps of Engineers provides for removal of shoal material, through contracts with hydraulic dredging companies. Federal efforts are funded through user fee taxes assessed on the value of cargo, collected at ports nationwide.

Maintenance of Brunswick Harbor

A Local Assurer is not presently required for maintenance of the disposal areas at the Port of Brunswick. This situation is expected to change once the proposed deepening of Brunswick Harbor is completed. Currently the U.S. Corps of Engineers provides disposal areas, including dikes for the Brunswick Harbor and dredging to maintain the 30 feet channel depth.

Atlantic Intracoastal Waterway

There are 136.5 miles of Atlantic Intracoastal Waterway within the State of Georgia. The commercial uses of the waterway has been reduced tremendously since it was first put in operation. The Corps of Engineers dredges the channel to a depth of 12 feet MLW (mean low water); the Department is the local sponsor for the Atlantic Intracoastal Waterway.

Funding

Funding for harbor projects comes from several sources. Obligations of the Local Assurer are financed through allocations from the General Assembly; the Corps of Engineers finances dredging of the channel using federal sources. Other major projects at the Savannah Port and the Brunswick Port are funded by the Georgia Ports Authority from port revenues.

KEY POINTS:

- Ports are important to Georgia's economy and our ability to participate in opportunities available in the global marketplace.

- Coordination with the Ports should focus on intermodal access that will make entry and exit from Port facilities more efficient.

- Replacement of the Sidney Lanier Bridge is critical to the future economic development of the state.

- Maintenance of the navigation channels is important to shippers using the port and to the continued success of Savannah and Brunswick Harbor.

MODAL PROFILE:

Bicycles / Pedestrian Facilities

THE ROLE OF BICYCLES

Bicycle transportation has broad appeal. The Bicycle Institute of America estimates that in 1992 there were 99 million bicyclists in the United States. Within the past decade the number of cyclist has grown by 37% nationwide. This includes an estimated 31 million adults who cycle regularly and 4.3 million who commute to work.[37]

ISTEA emphasizes bicycle transportation as part of a balanced intermodal transportation network. The Georgia Department of Transportation is in the process of developing The Statewide Bicycle Transportation Plan. Local areas are also developing Bicycle Transportation Plans addressing local needs. The Statewide Bicycle Transportation Plan will incorporate the results of local area efforts as those are completed.

Bicycling received strong support during the Transportation 2000 public workshops. Transportation 2000 participants expressed a desire for bicycle facilities. The draft Statewide Bicycle Transportation Plan will respond to ISTEA and to public concerns expressed during Transportation 2000. The final plan will define the Department's policy on bicycle transportation and outline a work plan implementation.

Projects identified in the Statewide Bicycle Transportation Plan can be funded with federal funds. These funds currently require matching dollars from state or local sources. Transportation Enhancement Activity (TEA) funds may also be used for planning and construction of bicycle and pedestrian facilities.

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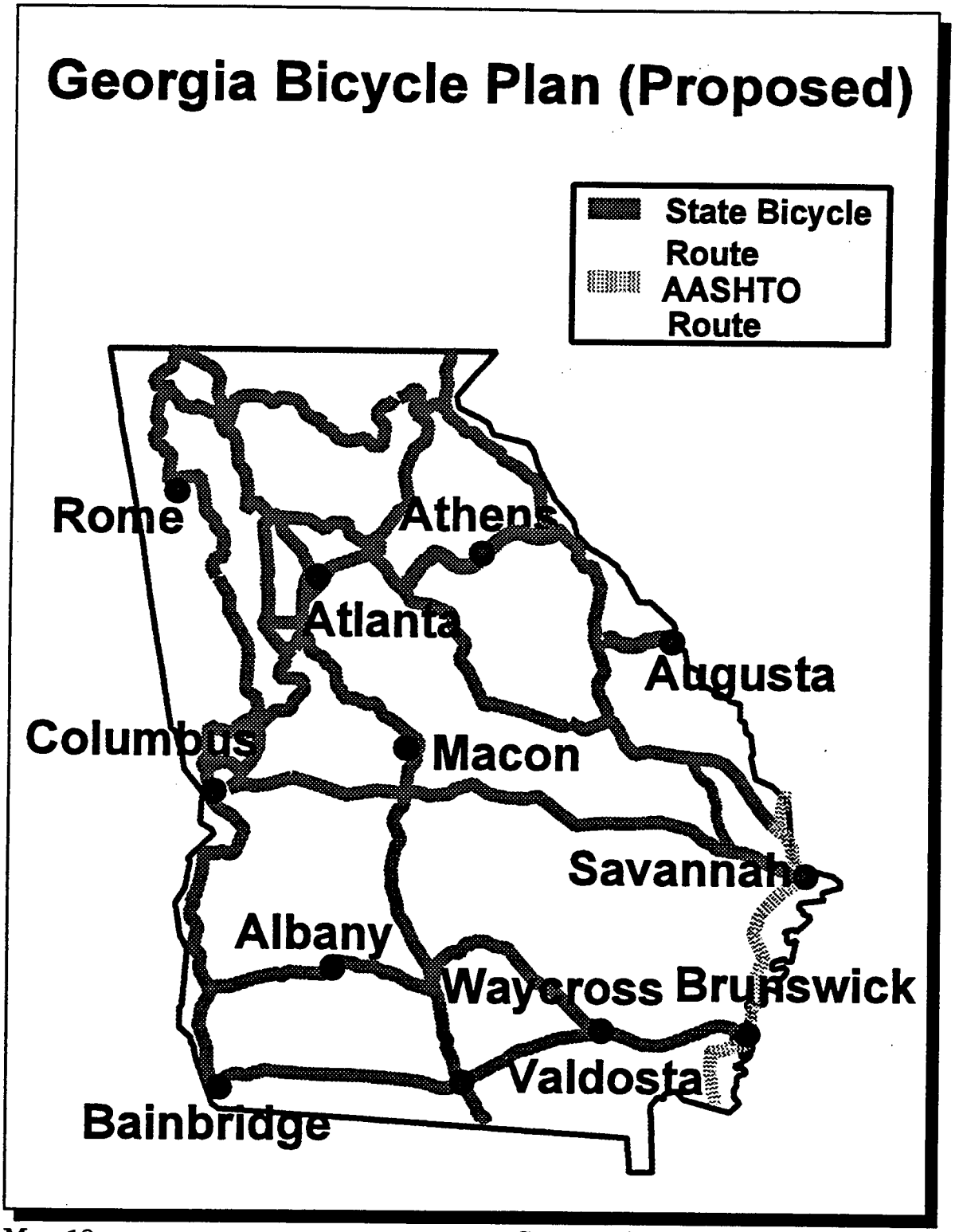
[37]The Bicycle Institute of America, Bicycling Reference Book: Transportation Issue, 1993-1994.



Map 18

Source: GDOT - Office of Planning

Bicycle Primary Route Network

The draft Statewide Bicycle Transportation Plan proposes to adopt twelve routes as the initial Bicycle Primary Route Network. The routes are shown on Table 5 below: and on Map 18, page D-65.

Route	Route
#1: Coastal Route (90 mi.)	#7: Wiregrass Route (190 mi.)
#2: March to the Sea (430 mi.)	#8: Atlanta Link (255 mi.)
#3: Chattahoochee (470 mi.)	#9: Central Route (310 mi.)
#4: Trans-Georgia (260 mi.)	#10: Mountain Crossing (225 mi.)
#5: Savannah River (295 mi.)	#11: Athens Link (90 mi.)
#6: Southern Crossing (230 mi.)	#12: Augusta Link (40 mi.)

Table 5 Source: GDOT Office of Planning

The Role of Pedestrian Ways

Walking is increasing in popularity as an exercise and as a form of transportation. Urban, suburban and rural areas can build sidewalks as low cost capital transportation investments with substantial return. Some bicycle and pedestrian facilities incorporate joint use - allowing the two modes to function on the same facility. Roadways that have transit service should be equipped with sidewalks and with other pedestrian amenities such as benches and shelters as appropriate.

In design and construction of pedestrian ways, curb cuts and other considerations for individuals with limitations are important. Curb cuts can provide a more friendly environment for wheelchair bound individuals to get to business, educational opportunities, medical and other trip destinations.

The safety of the pedestrian is also important. Design considerations such as medians, traffic islands, walkway safety zones and other pedestrian friendly design components should be used to increase pedestrian safety. Visibility of pedestrians

should be considered as well. Good illumination, especially in school zones, can maximize pedestrian visibility.

KEY POINTS:

- Bicycle and pedestrian transportation can be a valuable component of a balanced intermodal transportation system.

- Bicycle use and walking are expected to increase for all purposes, both as a mode of transportation and for health and recreation.

- Transportation 2000 comments from the public expressed strong support for bicycle and pedestrian transportation facilities.

- Bicycle and pedestrian transportation is energy efficient and environmentally friendly, having positive health benefits.

URBAN PROFILES

ATLANTA

ATLANTA REGIONAL COMMISSION
(ARC)

prepared by: Atlanta Regional Commission

The Atlanta Regional Commission (ARC) is the regional planning and intergovernmental coordination agency for a 10-county area. ARC's diverse planning responsibilities include transportation, environmental services, land use, job training and human services. ARC was created in 1971 with legislation passed by the Georgia General Assembly. The Atlanta Region has a long history of cooperative multi-jurisdictional planning. ARC's predecessor agencies have coordinated regional planning efforts since 1947 with the creation of the first publicly-supported, multi-county planning agency in the United States. The Metropolitan Planning Commission provided planning services for the City of Atlanta and Fulton and DeKalb counties. ARC's growth, expanding to 10 counties with 63 active municipalities, reflects the rapid growth of the Atlanta Region.

ARC, the federally designated Metropolitan Planning Organization responsible for the Region's transportation planning, assists in the distribution of federal transportation funds. ARC provides a forum for cooperatively identifying the Region's transportation priorities which are included in the Atlanta Regional Transportation Improvement Program (TIP). Responding to recent federal legislation and evolving regional transportation priorities, the current TIP includes a diverse array of projects. Transit, bike and pedestrian projects are receiving increasing shares of transportation funds. ARC's transportation planning responsibilities also include monitoring the Region's general aviation and air carrier needs. The Commission is also responsible for coordinating efforts to meet the requirements of the Clean Air Act Amendments of 1990.

THE REGION

Growth has been the dominant theme in the Atlanta Region for the past two decades. The Region's population increased by more than 1 million between 1970 and 1990, according to the U.S. Census. The fastest growth occurred in the boom years of the 1980's with a 35% increase in population. ARC estimates that about 2,777,000 people resided in the 10-county Atlanta Region in 1994. The Region includes about 40% of the State's population, although its 2,987 square miles only accounts for 5.1% of Georgia's land area. The State's four most heavily populated counties are all located in the Atlanta Region.

Regional growth has largely been concentrated in the northern suburban counties. An area including Gwinnett County and portions of Cobb and north Fulton counties attracted most of the Region's growth; about two-thirds of the population growth and nearly three-fourths of the employment growth occurred in this area from 1970 to 1992. Gwinnett County was the nation's fastest growing large county (population over 100,000) between 1980 and 1990, according to the U.S. Census Bureau. This growth trend has continued into the 1990s; these three counties had the largest absolute population gains between 1990 and 1994. Several suburban employment/retail centers have emerged during the past decade, most located in the northern counties near freeway exits and major interchanges. The suburban nature of the Region's growth is reflected in the low-density development; in 1994 there were only about 334 households per square mile.

In recent years, more economic and residential growth has been attracted to the Region's southern counties. These counties provide businesses with good access to major transportation facilities and residents with more affordable housing. These factors allowed Henry County, together with Fulton County, to achieve a higher rate of population increase during the first four years of the 1990s than during the 1980s. Henry and Fayette Counties have experienced the Region's highest rates of population growth since 1990.

The Region's growth, despite a slowdown associated with national recessionary forces in the early 1990s, is expected to remain strong. Current ARC forecasts

anticipate that the population will increase to about 4,169,700 by the year 2020. This represents a 63% increase over the 1990 population of 2,557,800. Household size continues to slowly decrease, reflecting the character of the Region's population.

The City of Atlanta is the employment and geographic core of the Region. About one-third of the Region's workers identified the City of Atlanta as their work location in the 1990 Census. Reflecting traditional commuting patterns, the Region's Interstate system radiates out from the City's downtown area to outlying counties. However, increasing suburbanization has provided new major retail/employment centers which increasingly rival the City's Central Business District. The City's share of regional employment dropped from 40% in 1980 to 28% by 1990. According to ARC estimates, the percentage of the Region's population living in the City of Atlanta fell from 22% in 1980 to 16% by 1992.

Growth has transformed the Atlanta Region into the economic center for Georgia and the southeastern United States. ARC estimates that employment for the 10-county area grew from 901,157 to 1,426,000 from 1980 to 1990, a 58% increase. Employment in the Atlanta Region accounted for 48% of Georgia's total employment in 1991, revealing the importance of the Region's economy to the entire state.

Shifts in employment by industry type occurred along with the economic growth. The Services Industry had the highest growth by industry type between 1980 and 1990, according to ARC estimates, growing to a 25 percent share of all Regional employment. Meanwhile, the manufacturing industry experienced the greatest decline among major industry types, falling from a 15 percent share in 1980 to a 11 percent share by 1990. Retail trade and government were the second and third largest employers in 1990, with a 18 percent share and 15 percent share respectively. This trend is expected to become more pronounced by the year 2020. Together, these three industries comprised 58% of all regional employment in 1990. By 2020, ARC estimates they will capture 62% of total regional employment.

THE TRAFFIC

Growth has greatly impacted the Region's transportation systems and commuting patterns. Population and economic growth have placed more demand on freeways and surface streets. The estimated annual vehicle trip miles in 1990 were 77,190,191 miles per day. The emergence of suburban activity centers has changed the traditional suburb-to-city travel pattern.

Increasingly, suburban commuters are driving to other suburban destinations instead of traveling to Atlanta's central business district. According to the 1993 Research Atlanta Study, the percentage of work-related trips destined for downtown Atlanta dropped from 62% in 1960 to 36% by 1980.

The choice of travel mode for work trips has shifted, with a higher percentage of commuters driving alone. Comparisons between 1980 and 1990 Census data for the Atlanta region reveal the changing commuting pattern. Between 1980 and 1990, the number of workers for the nine-county area increased from 869,598 to 1,284,458, a 48% increase. A larger proportion of workers were driving to work alone by 1990, placing an additional demand on road facilities. The percentage of workers driving alone increased from 69.1% in 1980 to 78.2% by 1990. There was a corresponding decrease among those using carpools and public transit. Workers traveling in carpools dropped from 18.6% to 11.9%. Public transit usage decreased from 8.2% in 1980 to 5.2% by 1990, according to the 1990 Census data.

Goods movement and delivery play a substantial role in the Atlanta Region's transportation system. The freight industry serves the Region's medical, service and tourism industry; manufacturing, wholesale and retail centers; as well as the construction industry. Major freight intermodal facilities linking air, rail and highway cargo services in the Region require adequate transportation infrastructure.

MOVING PEOPLE AND GOODS - THE TRANSPORTATION SYSTEM

The Freeways

Freeways have had a major influence in shaping the Atlanta Region. Three Interstate highways radiate out from the City of Atlanta into suburban counties. The capacity and convenience for automobile travel provided by these freeways allowed the development of the suburbs. Access to national markets via the Interstate system has helped make the Atlanta Region one of the nation's major motor freight centers. Major office and retail centers have emerged along the radial Interstate system and its junctions with the perimeter highway (I-285). I-285, completed in 1969, and originally intended as a bypass around Atlanta, has been a catalyst for intense suburban development, drawing the Region's economic focus away from the City of Atlanta's traditional downtown area. A more recent major road project, the opening of the Georgia 400 Extension in mid-1993, provides a new route to the City of Atlanta from Fulton County's northern suburbs. This project is likely to intensify the already fast-paced commercial and residential growth of north Fulton County, as well as increase the accessibility of much of the City of Atlanta.

The Atlanta Regional Commission and the Georgia Department of Transportation have placed into operation the first segment of a high occupancy vehicle (HOV) system (known as Express Lanes) in portions of the Region's Interstate system. This segment on I-20 east between downtown Atlanta and I-285 will be followed in 1995 by "Express Lanes" on I-75 and I-85 inside of I-285. These lanes will be constructed by restriping the existing pavement in order to accommodate the additional Express Lanes without removing any lanes from general traffic. Current GDOT efforts are aimed at expanding this Express Lane system to additional portions of the Interstate system.

ARC is working closely with the private sector and public agencies on a Commuter Options Program. This program is intended to encourage commuters throughout the Region to change their personal vehicle commuting habits. This will accomplished by providing customized information, education and technical

assistance to employers regarding commuting alternatives, and will complement the Express Lane Program.

The Georgia Department of Transportation is developing the Advanced Traffic Management System (ATMS) to improve transportation operations on freeway and other major arterial facilities. Strategies will include improved signalization, changeable message signs and traffic control centers.

The Public Transportation System

The Metropolitan Atlanta Rapid Transit Authority (MARTA) provides heavy rail and bus service to Fulton and DeKalb Counties. MARTA began providing bus service in the early 1970s when it assumed control of existing private sector bus operations. Rail service followed in 1979, starting on the East Line from Avondale to the Georgia State Station. In 1994, the MARTA heavy rail system included 38.6 route miles and 33 stations. Construction is underway on an additional seven (7) miles of the system and three stations. This portion of the system will open in 1996. Bus service consists of 678 vehicles operating on 150 routes covering 1,500 route-miles. The MARTA system also includes several Park/Ride lots which provide about 2,800 spaces for bus service and 22,000 spaces at rail stations. Approximately 215,000 revenue passengers enter the MARTA system on weekdays, while total boardings approach 460,000 on a daily basis.

Cobb Community Transit (CCT) operates bus service on local routes in Cobb County and express routes to downtown Atlanta. CCT connects to MARTA at four rail stations. CCT and MARTA have a reciprocal agreement which allows passengers to transfer without additional charge between the two systems. CCT currently serves about 9,500 weekday passengers.

Douglas County operates a vanpool service which provides commuter transportation services for county residents who work in the City of Atlanta. Thirteen vans are used for this service.

Other Transportation Alternatives

Since the passage of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), the Atlanta Region has been actively engaged in studying and planning for a multi-modal transportation system that is equipped to transport people and goods well into the twenty-first century. Chief among these activities is planning for a multi-modal passenger terminal in downtown Atlanta. Design work and environmental studies for the multi-modal terminal are currently underway by the Georgia Department of Transportation. A second initiative that could greatly enhance transportation in the Atlanta Region is commuter rail. Presently, GDOT is studying the feasibility of a commuter rail system using existing freight rail lines in North Georgia. The study is scheduled for completion in 1995. Third, the Atlanta Region Bicycle Transportation and Pedestrian Walkways Plan, prepared in 1993, is a blueprint for a comprehensive bicycle and pedestrian system to serve the Atlanta Region. One of the first bicycle and pedestrian projects to be constructed will be a 15-mile trail from Atlanta to Stone Mountain. This project is scheduled for completion in time for the 1996 Olympics and is likely to draw even more attention to the viability of bicycling and walking as transportation alternatives. An update to this plan will be completed in early 1995.

Developing a Regional Transportation Vision

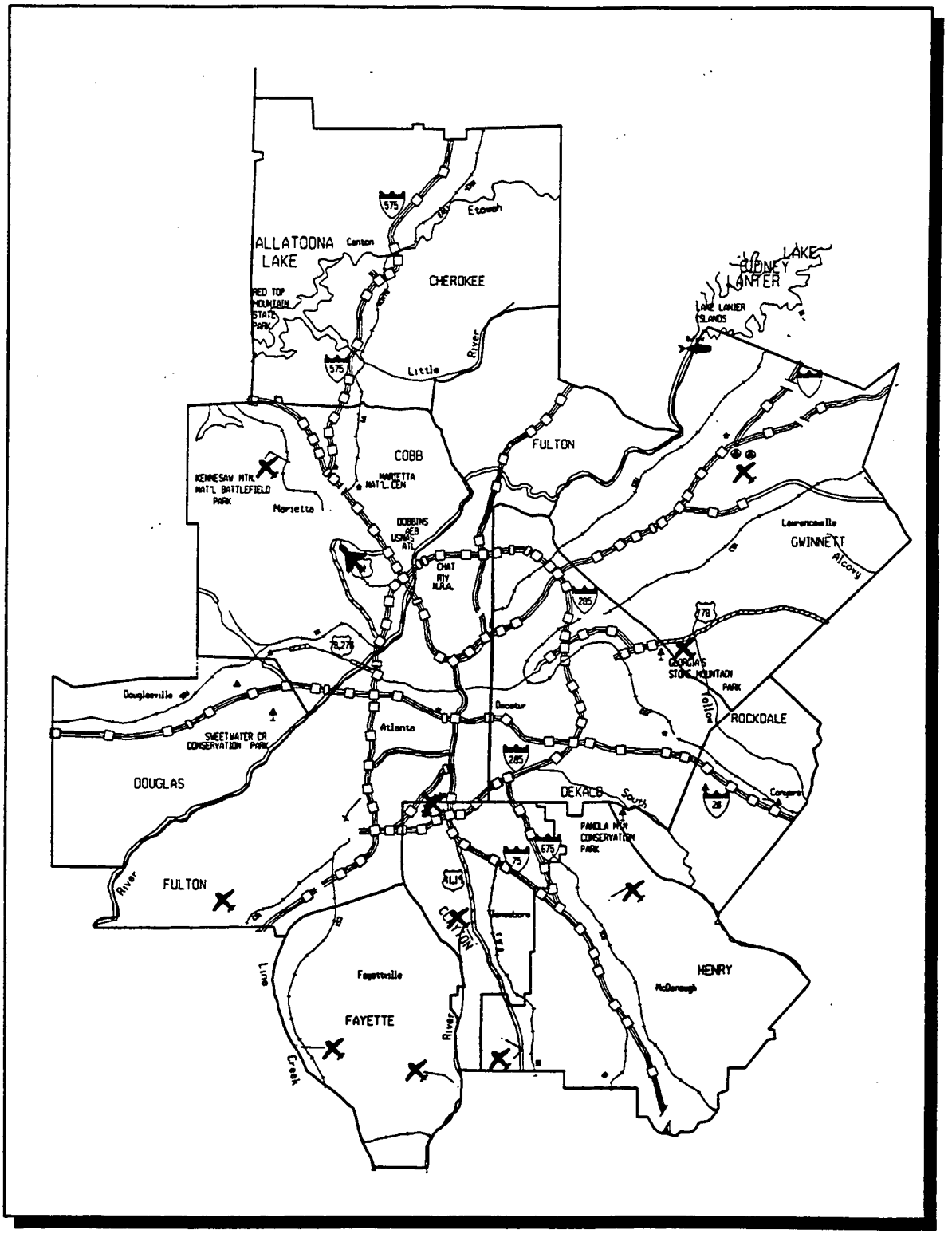
Since 1991, ARC has been working with a broad cross-section of regional citizens and interests to create a shared vision for the Atlanta Region's future. This effort, called VISION 2020, documented the general vision developed through unprecedented public involvement and has now moved into its second, more challenging phase. Phase Two of VISION 2020 has brought together individuals representing myriad perspectives and interests in the Region and has put them to work in a collaborative way to develop new, realistic initiatives to move the Region toward fulfilling its vision. This phase is expected to conclude in the fall of 1995 and is likely to have a substantial impact on the way the Atlanta Region's transportation system is developed in the 21st century.

IMPROVING AIR QUALITY - A REGIONAL CHALLENGE

The Atlanta Region fails to meet federal standards for ground level ozone, which is a highly reactive gas formed through a complex set of chemical reactions involving hydrocarbons, nitrogen oxides and sunlight. Increasing levels of ground level ozone lead to respiratory irritation, inhibit plant growth and can damage other materials.

The Clean Air Act Amendments of 1990 set federal ozone standards, classified areas of the nation based on the severity of their ozone problem, set timetables for meeting National Ambient Air Quality Standards (NAAQS) and require specific actions to help meet these standards. The Atlanta Region is classified as a "serious" nonattainment area, which means emissions must be reduced by 15% from 1990 levels by 1996 and the Region must attain ambient NAAQS by 1999. Actions that must be taken in the Region include developing a plan to reduce mobile source emissions, developing measures to enhance and expand existing vehicle inspection and maintenance programs and developing a clean fuel fleet program.

In the Atlanta Region, the majority of hydrocarbons and nitrogen oxides are in emissions from cars, buses and trucks. Thus, the strategies outlined above will serve to reduce the emissions, hence limit the precursors to ozone in the Region's air. The challenge for the entire Region is to develop transportation plans and programs that successfully integrate the need for regional mobility and accessibility with the requirement to clean the Region's air and meet federal standards within a rigid time frame.



Map 19 Map of Atlanta Metropolitan Planning Area

AUGUSTA

AUGUSTA REGIONAL TRANSPORTATION STUDY AREA (ARTS)

prepared by: Augusta-Richmond County Planning Commission

The Augusta / Aiken area is part of the second largest Metropolitan Statistical Area in Georgia. It is also the second largest urbanized area in Georgia with a 1990 population of 286,000. The central city of the area is Augusta with a population of 44,600. Other municipalities include Grovetown, North Augusta and Aiken. Urbanized populations are located outside of incorporated places of the three counties in the MSA. Sections of western and southern Richmond County are highly developed urban areas with both high residential densities and commercial strips located along major arterials. The eastern portion of Columbia County is a rapidly developing bedroom community. It has seen high residential growth for the past ten to fifteen years and has recently begun to attract commercial activity and therefore employment. Areas south of the city of Aiken in South Carolina have also experienced rapid growth.

The economic health of the Augusta / Aiken area is directly related to the defense establishment and to a sizable medical sector. The two federal institutions are Fort Gordon in southwestern Richmond County and the Savannah River Site (SRS) in Aiken County. Fort Gordon has not yet been targeted by the base closure commission and SRS has seen layoffs but has been actively attempting to redefine its mission. Should either one of these institutions be threatened with massive reductions, the economic base of the Augusta / Aiken area would be severely impacted. The Medical College of Georgia is expanding its facilities and is advancing the use of high technology in the provision of health care. Other medical institutions with expanding facilities include University Hospital and Augusta Regional Medical Center.

The Augusta / Aiken area has been guided by transportation planning since the mid-1960s when the first Augusta Regional Transportation Study (ARTS) Street and

Highway Plan was prepared. The ARTS study is a comprehensive, continuing, and cooperative study that involves all three urban counties, several municipalities and two states, as well as the federal government. Up until 1980, the Augusta urbanized area included only the North Augusta area in Aiken County. After the 1980 Census, the urbanized area and the ARTS study area were expanded to include a larger portion of Aiken County including the City of Aiken. The 2010 Street and Highway Plan, adopted in 1989, did not fully integrate the needs of the new portion of the study area with the original study area. A comprehensive data base for the expanded area has been developed and the ARTS models are being modified to incorporate the data.

The ARTS program has adopted a series of goals and objectives which it uses to guide the transportation planning process. A variation of these goals was used when adopting the 2010 Street and Highway Plan. They have been amended to reflect the need for developing a long range transportation plan for 2015. The new goals reflect the intent of the Intermodal Surface Transportation Efficiency Act of 1991. They are as follows:

Goal #1 - Develop a transportation system integrated with planned land use which will support the regional development objectives and realizes the need for connectivity throughout the urbanized area.

Goal #2 - Develop a transportation system that is financially and politically feasible, has broad public support and involvement, and has a commitment to be implemented by elected officials, technical personnel, and those providing transportation services.

Goal #3 - Develop a balanced transportation system that will allow safe and effective mobility throughout the region and promote efficient and economic movement of persons, goods and services.

Goal #4 - Develop a transportation system that will enhance the economic, social and environmental qualities of the region, use available resources wisely, promote

the aesthetic beauty of the region and not result in any adverse environmental impacts.

The issues facing the Augusta area as it continues to develop its 2015 Transportation Plan are those found throughout the nation. They include coping with increasing congestion in suburban areas, trying to maintain existing infrastructure, especially bridges, and providing adequate public transportation in areas without a dense employment center. The ARTS program seeks to address these issues and will adopt a long range plan that will move us toward solutions.

The ARTS Policy Committee adopted a Year 2015 Transportation Plan on December 8, 1994, which included highway projects, transit projects, bikeway projects, intermodal projects, airport projects and transportation enhancement projects. A financial plan was prepared to insure that the adopted transportation plan was fiscally restrained.

Some of the major highway projects include the extension of Bobby Jones Expressway from New Savannah Road in Georgia to I-20 in South Carolina; widening Bobby Jones Expressway from I-20 to U.S. 25; widening I-20 from Bobby Jones Expressway in Georgia to U.S. 25 in South Carolina.

Improving transportation to Fort Gordon is also a part of the adopted transportation plan. The most notable adopted project serving Fort Gordon is the addition of a new connector route (Belair Road Extension) from I-20 to gate 1 at Fort Gordon.

Improved transportation to the municipal airport (Bush Field) is a part of the adopted transportation plan. The widening of Tobacco Road and New Savannah Road are the major access improvements to the airport. The addition of a service road from the cargo center to New Savannah Road is planned. The construction of T-hangers at Daniel Field are also a part of the plan.

The Augusta Public Transit has thirty buses and four paratransit buses. There are seventeen routes on the Augusta Public Transit System. The adopted transportation plan emphasized operating assistance for the Augusta Public Transit

and the Aiken County Transit System through the Fiscal Year 2015. Capitol assistance with federal funds for the Augusta Public Transit and the Aiken County Transit System was limited through Fiscal Year 2000.

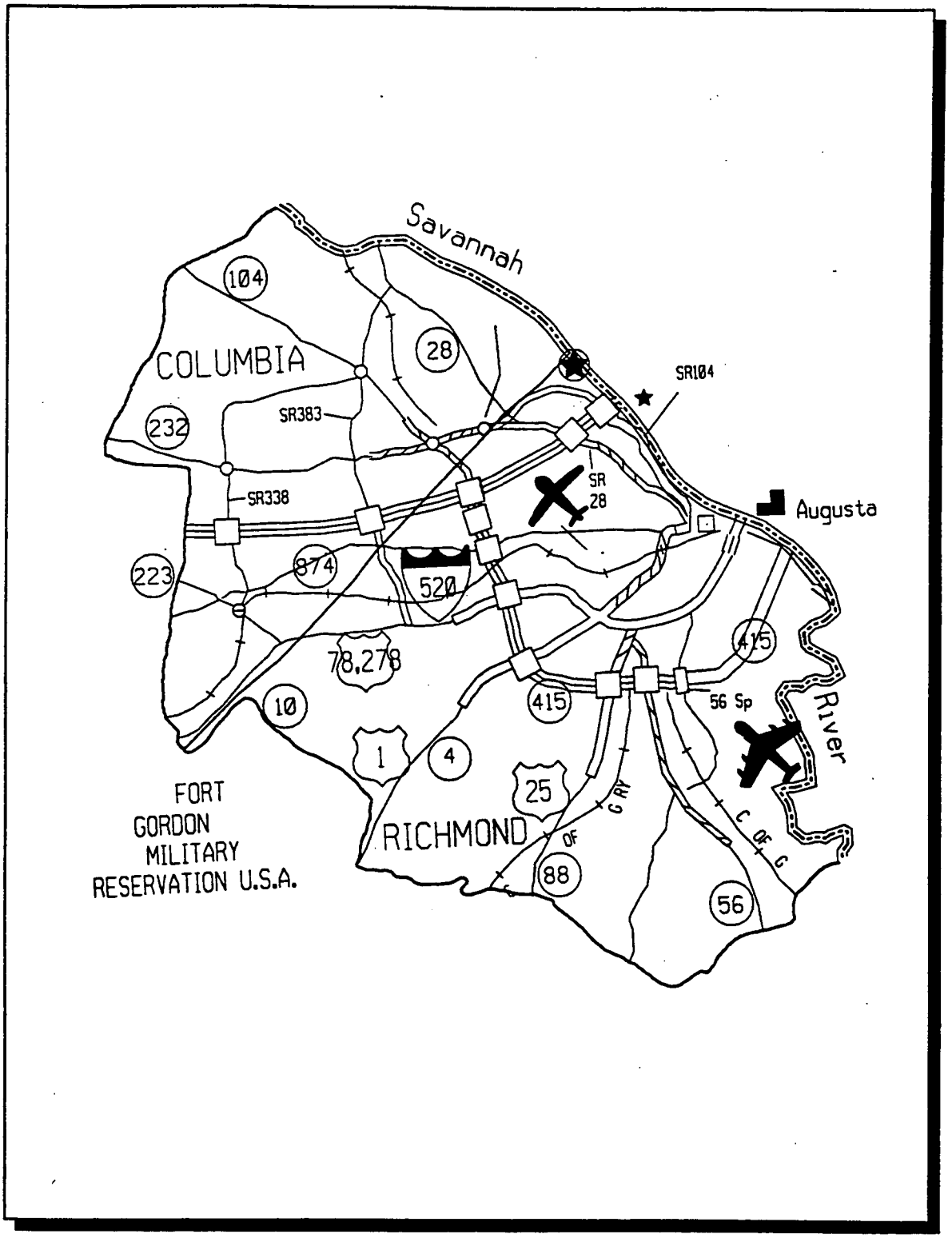
The adopted transportation plan includes a priority intermodal project on Fifteenth Street near Green Street with the planned construction of an overpass at the CSX Railroad. The transportation plan also includes the use of Railroad - Highway Demo funds and Highway Demo funds on Olive Road.

The FY 1996 Unified Planning Work Program contains an element to update the Augusta Railroad Study. The purpose of the study is to re-evaluate the rail / highway conflicts in the City of Augusta and to identify possible solutions to the remaining problem locations. It is anticipated that a large part of the study will be devoted to re-evaluating the feasibility of relocating the Southern mainline railroad.

The Augusta Canal was constructed in 1845 and enlarged in 1875. Its national significance was established as early as the 1970's, when the Secretary of the Interior designated the canal and its nearby environs, encompassing nineteenth century mills and natural areas, as a National Historic Landmark. The Augusta Canal Master Plan Study was included in the Augusta Regional Transportation Study FY 93-97 Transportation Improvement Program. The first transportation enhancement funds (ISTEA) expended on preliminary engineering in Georgia were for the development of the Augusta Canal Master Plan. The master plan was completed in 1994. The master plan emerged from an extensive local public involvement process, spanning two years and included 16 public meetings attended by hundreds of participants. A partnership was formulated among the Augusta Canal Authority, the City of Augusta, other local, state, and federal governments; non-profit groups; and the private sector to accomplish together what no single entity could do alone. Two construction projects which were recommended in the Master Plan are in the ARTS adopted Year 2015 Transportation Plan. Other projects from the Augusta Canal Master Plan may be added to the adopted transportation plan at a later date.

The ARTS Bikeway Plan was adopted by the ARTS Policy Committee on June 16, 1994. Four major corridors were identified as potential sites for bikeways. Three of the corridors are in Georgia and one corridor is in South Carolina. The first corridor uses existing local streets to connect residential areas and areas such as the Medical College of Georgia, Augusta College and Paine College. The second corridor extends along the Augusta Canal from the headgates in Columbia County to downtown Augusta. The second corridor is a combination Bikeway and Pedestrian Way. The third corridor extends along State Route 28 from the South Carolina Line to downtown Augusta. The fourth corridor is adjacent to a railroad in North Augusta, South Carolina. The three goals established in the Bikeway Plan are as follows:

- Goal number one is to increase bicycle safety and awareness.
- Goal number two is to make the existing transportation network more bicycle friendly.
- Goal number three is to improve the future transportation network by factoring bicycle facilities into the planning process.



Map 20 Map of Georgia Portion of Augusta Metropolitan Planning Area

CHATTANOOGA

INCLUDING THE GEORGIA PORTION OF THE CHATTANOOGA URBAN AREA TRANSPORTATION STUDY

prepared by: Chattanooga-Hamilton Co. Regional Planning Commission

The Chattanooga Urban Area Transportation Study (CUATS) serves Hamilton County, Tennessee and the urbanized portions of Dade, Walker, and Catoosa Counties, Georgia. Municipalities in Georgia that are included in the Study Area are: Rossville, Fort Oglethorpe, Chickamauga, Ringgold, and Lookout Mountain. That Chattanooga Urban Area Metropolitan Planning Organization is responsible for transportation planning in the Urban Area, and is currently completing a comprehensive long-range transportation plan.

THE BI-STATE CHATTANOOGA REGION:

The Chattanooga Urban Area is the hub of commercial, political, and social activity for Southeast Tennessee and Northwest Georgia. Chattanooga and the surrounding area have been an established raw materials processing center for almost 125 years. Today the Urban Area is less dependent on manufacturing. Improved accessibility, communications, technology, and transportation facilities have allowed tourism and other service industries to dominate the economy.

The Chattanooga Urban Area has "cleaned up" its image. In 1989, the area met the federal standards for ozone, which was a celebrated accomplishment. A new freshwater aquarium, children's discovery museum, and a completely revitalized downtown has renewed the social and cultural heart of the region. As a host region for the President's Council for Sustainable Development, CUATS will encourage innovative and responsible transportation planning for the sustainability of the Urban Area.

The entire Urban Area's population is 352,725 (1990), of which approximately 67,000 belongs to the Georgia portion. A major shift in population away from

Chattanooga proper toward unincorporated sections of the Urban Area has occurred. Catoosa, Walker and eastern Hamilton County have experienced the most growth. This transfer of population is creating new challenges for traffic engineers, land-use planners, transportation planners, and especially commuters.

STREETS AND ROADS:

CUATS will strive to provide a roadway system capacity that is sufficient to accommodate the travel demands of area residents and businesses while considering the needs of the natural environment. Reliable long range travel-demand forecasting for the entire Urban Area has been completed by the staff of the MPO. Projected growth or decline is spatially analyzed by studying trends in the area's six "travel corridors." This analysis has demonstrated the need for greater connectivity of road systems in the Urban Area, especially along state borders. MINUTP transportation planning software assists in pinpointing system deficiencies and prioritizing future street and road projects. The most significant special project in the CUATS area is the new Bypass around the Chickamauga-Chattanooga Battlefield National Military Park in Catoosa County which will help alleviate traffic through the park and allow for greater north/south accessibility.

TRANSIT:

The Chattanooga Urban Area is a national center of innovation in the area of urban transit system development. Through increasingly effective management, research, and vision, public transportation providers continue to offer a wide variety of services for the citizens of the area. Dade, Walker, and Catoosa Counties operate transit services on "pre-scheduled" routes. These services are offered at no cost to the passengers. The Chattanooga Area Regional Transportation Authority (CARTA) provides fixed-route bus service for Chattanooga and sections of Hamilton County to the Georgia state line. CARTA operates a fleet of electric shuttles in the downtown area, complete with an electric vehicle "living laboratory" and research center.

AIR TRANSPORTATION:

Since the mid 1960's, numerous airport improvements have been undertaken at Chattanooga's Lovell Field, the hub of air activity in the region. A new modern

terminal building was recently completed, and as a result enplaned passenger use is projected to increase by 61% by the year 2013. Goods movement through the airport has increased substantially which provides service to North Georgia and Southeast Tennessee.

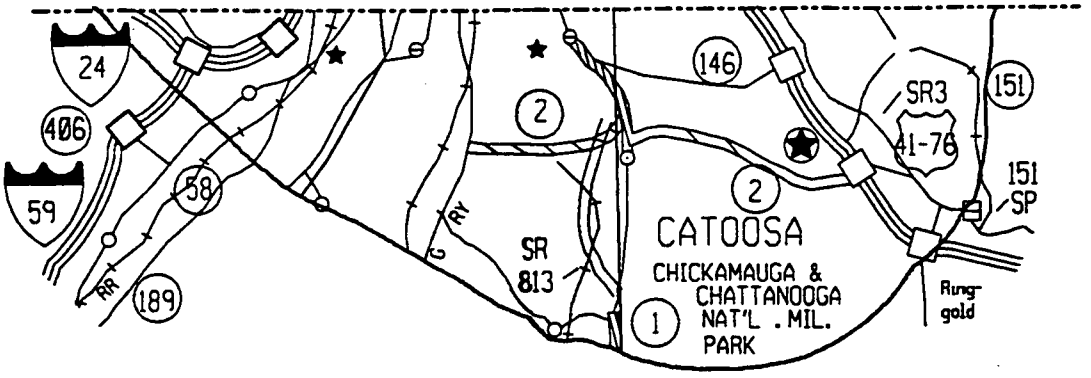
GOODS MOVEMENT:

Goods movement into and out of the region is provided by a variety of modes. Interstate 24 intersects with Interstate 59 in Georgia, and Interstate 75 with Interstate 24 in Tennessee. Both routes are used extensively by trucks. the Port of Chattanooga has 16 terminals carrying needed raw materials for industry in the area. The Urban Area is home to the largest rail hub between Cincinnati and Atlanta. The Metropolitan Airport serves the region with overnight freight service to anywhere in the United States. In a new global economy, the ever-increasing need for an efficient goods movement system is apparent in transportation planning. CUATS will include an intermodal goods movement element in the long-range transportation plan.

ALTERNATIVE TRANSPORTATION:

A major push for alternative transportation in the Chattanooga Urban Area is underway, especially bicycle and pedestrian transportation. A comprehensive bicycle plan is being developed to connect paths between Tennessee and Georgia. Riverwalk, a major riverside greenway, will be completed within the next five years. Bicycles and greenways will provide access for other modes of transportation and should become a viable alternative to the automobile.

The reality of the financial constraints in terms of transportation funding will require the Chattanooga Urban Area to develop innovative methods designed to manage congestion and comply with clean air mandates while fostering economic development for the region. CUATS will continue to strive to provide an efficient system for the movement of people and goods; provide quality economic growth; and encourage a desirable quality of life for the citizens of the Chattanooga Urban Area Transportation Study.



Map 21 Map of Georgia Portion of Chattanooga Metropolitan Planning Area

COLUMBUS

COLUMBUS PHENIX CITY TRANSPORTATION PLAN (CPTS)

prepared by: Columbus Department of Community Development

General Description

The Columbus and Phenix City Transportation Management Area (TMA), serves an area of approximately 220,000 people in two states, Georgia and Alabama. The two communities that comprise the TMA are separated by the Chattahoochee River and connected by four bridges. The metropolitan area experienced a modest population increase from 1980 to 1990. This trend is anticipated to continue to the year 2015. The area will gain in significance to the region due to its employment base, access to a major Army installation, Ft. Benning, the infrastructure, residential development, and industrial and commercial growth in outlying areas.

Streets and Roads

There are over twenty major travel corridors in Columbus and Phenix City. Traffic circulation is served by a radial system of streets and the circumferential routes of Interstate 185, the J.R. Allen Parkway and US 280 SR 431.

The long range demands of growth and development are a predetermining factor of long range traffic and travel needs. The forecasting of socio-economic variables and their calibration is done by a computer prototype of traffic and road conditions, TRANPLAN. The computer model helps identify problems and congested road segments. Analysis of deficient road segments has led to a list of over fifty projects that needs to be constructed. Local awareness and concern for the environment adds to the complexity of project selection and design. The decision making process regarding improvement strategies does take into account environmental and sociological needs of the community. The implementation of these road

improvements would keep existing roads functioning at a service level of C or greater. More important the maintenance of an efficient roadway network will impact the social, economic, environmental and ecological resource base.

Alternative Transportation

Both the short and long range plans in the metropolitan area include an Alternative Transportation Plan. Alternative transportation would reuse abandoned rail lines for bicycling, hiking, jogging, and other related projects. Alternative transportation has made it possible for the construction of an expansive riverwalk both on the Georgia and Alabama banks. Alternative transportation also connects neighborhoods through a system of sidewalks.

Airport

The operation of the existing airport facility will continue. The airport completed the construction of new control tower and terminal in 1991. Improvements to the airport landing and safety facilities are moving toward state of the art technology.

Railroad

The TMA has begun an in-depth analysis of rail activity. The study will address present levels of rail service and future demand to sustain economic and industrial growth. The third aspect of the study involves the feasibility of relocating existing rail yards to other possible locations in Columbus and the Phenix City area.

Water Transportation

The Columbus Port Authority manages a barge port in southwest Muscogee County on the Chattahoochee River. The port serves the more northern barge interests on the Chattahoochee River, since Columbus is the northernmost navigable city on the river. The port serves occasional barge traffic and is accessed via Lumpkin Boulevard and the Georgia Southwestern Railroad.

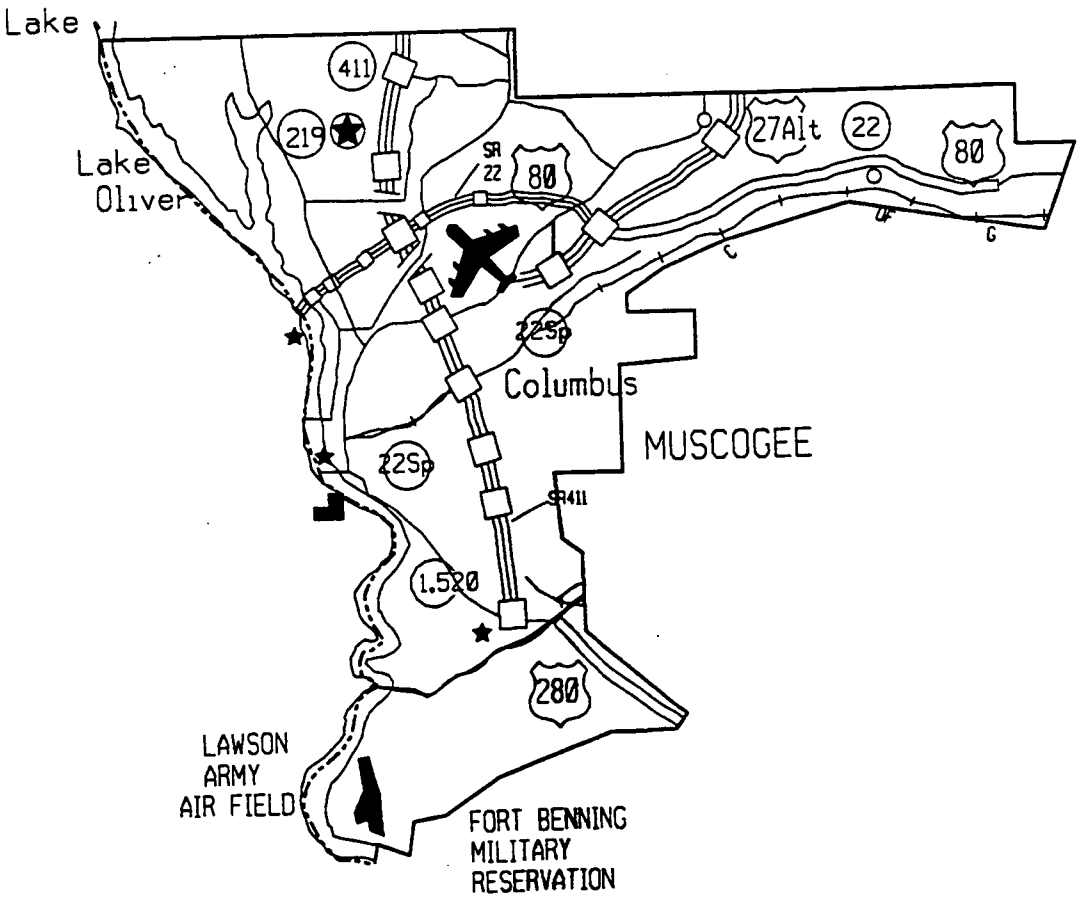
Transit

The city of Columbus through its transportation department, METRA, operates several public transportation services. The fixed route bus service is one major service available. The buses run on all major roads five (5) days a week and 12 hours a day. There are two demand response services available, dial-a-ride and subscription. Dial-a-Ride service provides each rider with door-to-door service. Subscription service has a fixed origin and destination available to a special interest group while it is still accessible to the public at a predetermined fare.

METRA has identified revenue vehicle replacement as its priority capital need. The estimated 12 year cost of the needed transit buses is $4 million. Additional capital needs, estimated to cost $1.45 million over the next six years, have also been identified and prioritized. These include fleet maintenance, storage facilities, transit access facilities, and etc. The operating cost is estimated to be $2.3 million for FY95 and to increase 5% annually. A total amount of $49.2 million will be needed over 15 years.

It is difficult to make long-term financial forecasts for the METRA's transit service because it is hard to predict the availability of federal financial assistance and the local financial commitment. The assumption was made that federal funding would remain at the same level as that of the federal fiscal year 1994 and the City would commit its match accordingly. Based on that assumption, it was predicted that they would receive $8.9 million for capital and $10.9 million for operating over 15 years.

Because of the limited funding for transit operating, the service will be held at the current level while emphasis will be placed on increasing ridership and therefore efficiency of service.



Map 22 Map of Columbus Metropolitan Planning Area

ALBANY

DOUGHERTY AREA REGIONAL TRANSPORTATION STUDY (DARTS)

prepared by: Albany-Dougherty Planning Commission

The Albany Metropolitan Area is the commercial, business, and political center for the southwestern section of the state of Georgia. Traditionally the market center for a vast regional farm economy, the area's economy has diversified since World War II to include manufacturing, retail and service employment. The Albany Metropolitan Area consists of Dougherty County and portions of Lee County. The Metro Area is located in Southwest Georgia nearly 170 miles south of Atlanta, 90 miles southwest of Macon, and 90 miles southeast of Columbus.

The region's economic base is currently concentrated in the export of farm goods such as peanuts and pecans, and the manufacture of such items as rubber products (Cooper Tire), chemicals (Merck Chemical), food processing (Bob's Candies), beer (Miller), sporting goods (McGregor), and automobile parts (Delco Remy). In addition, the largest employer in southwest Georgia, the Albany Marine Corps Logistics Base, is located in Dougherty County.

During the period from 1940-1970 the population in the area more than doubled every 20 years. The population over the last twenty-five years has continued to grow, but at a considerably slower rate than before. The probable reasons for this are the fact that several large manufacturers such as Firestone Tire Company and Lilliston closed their facilities in the area. Additionally, the closing of the Turner Naval Base also contributed to the slowing population growth rate.

According to the 1990 Census, the Dougherty Albany Regional Transportation Study (DARTS) area was home to 110,503 residents. By 1993, the study area had an increase of 3,249 residents from 1990 to 113,752.

In order to project the future 2015 population, the growth rate for the area since 1950 was used. Using this growth factor, the future 2015 population for the DARTS area was calculated to be 156,732.

Based on this projected growth, the transportation system for the metropolitan area should be able to accommodate the projected increase in traffic if the planned road improvements are built. With adequate capacity existing in most transportation corridors, future needs will consist of operational improvements and capacity improvements.

Among the regional transportation priorities are 1) eliminating through traffic from residential areas in the downtown area, 2) the provision of adequate highway infrastructure for the developing suburbs, and 3) improving access to downtown Albany.

In November 1994, the DARTS Policy Committee adopted the 2015 Transportation Plan. In addition to the traditional highway and street and transportation system management elements, elements for transit, bicycle and pedestrian facilities, airport, and freight movements were included.

TRANSIT

The transit element lists the transit policy which states: "It is the policy of DARTS to provide a transportation system which offers cost effective alternatives to the automobile and to encourage a land use pattern that supports transit." Numerous implementing strategies are also identified which the DARTS Policy Committee will use when developing transportation plans.

In the future, the transit system serving city residents and businesses will play a crucial role in the area's transportation system. The option of a safe and efficient transit system will give single-passenger commuters a viable option and help reduce traffic on the area's roadways.

BICYCLE AND PEDESTRIAN

This plan element provides the bicycle and pedestrian policy which states: "It is the policy of DARTS for the safe and efficient use of pedestrian and bicycle facilities as an alternative to motorized travel." A list of implementing strategies is also provided for the DARTS Policy Committee to use when developing transportation projects.

The overall goal of the bicycle and pedestrian plan is to make as much of the DARTS area accessible by cyclists and pedestrians as possible. These facilities should serve major traffic generators, connecting neighborhoods, schools and colleges, employment and shopping centers, and recreational areas. These facilities should also provide safe and efficient access to public transportation. Virtually all streets can be made safer for bicycle and pedestrian use through proper planning, design, and construction techniques. In order to reduce overall costs and to insure quality construction, new bicycle and pedestrian facilities should be implemented concurrent with other roadway improvements, such as new construction, resurfacing, upgrading, curb and guttering, and multi-laning projects.

AIRPORT

The Airport section describes the DARTS Air Policy: "It is the policy of DARTS to encourage continued use and development of air transportation facilities." Implementing the strategies developed to support the air policy will help to ensure that The Southwest Georgia Regional Airport will continue to be the major air facility in the DARTS area. The Southwest Georgia Regional Airport will continue looking for ways to expand it's role in the overall transportation system for the next twenty years. The projects that have been proposed for the airport through 2015 offer the possibility of greater cargo movement, bigger runway capacity, development of industries at the airport, and better passenger service.

FREIGHT MOVEMENT

The DARTS area is fortunate to have a multi-modal freight system in place. There are rail lines, truck routes, and an airport at the disposal of residents and businesses within the study area. The Georgia Great Southern Railroad and Norfolk Southern Railroad lines are the primary rail routes in the DARTS study area. The Norfolk Southern line is the primary north-south freight corridor for the DARTS area.

However, the Georgia Great Southern route from Albany to Dawson, Georgia is proposed to be abandoned.

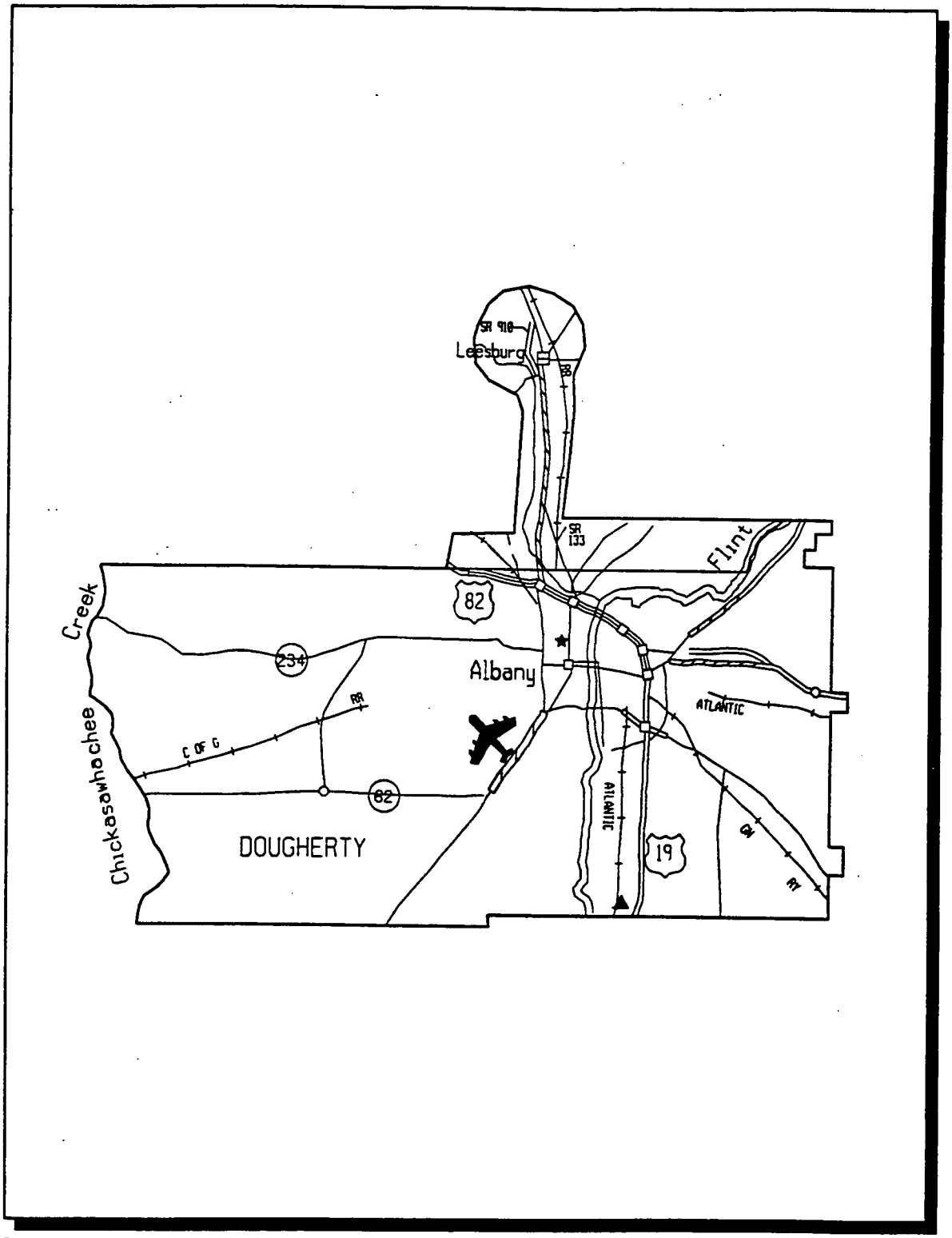
The DARTS Freight Policy, which states: "It is the policy of DARTS to encourage freight movement and to improve its efficient transport through the area", is currently being refined. A study of how freight moves through the area has just been finished. The preliminary results of the survey provided the basis for recommendations concerning the freight movement policy.

ISTEA ENHANCEMENT

The DARTS Policy Committee also included an Enhancement Element in their 2015 Transportation Plan. The element establishes implementing strategies that will be used to aid in the development of Transportation Enhancement Activity projects, such as: selection of projects that will improve the livability and quality of the area's transportation system; submittal of potential projects to the Georgia Department of Transportation upon notice of potential funding; through the review of projects using the fifteen planning factors, look for ways to enhancement activities can be accomplished as projects are planned and constructed; and use of community land use policies, plans, and ordinances to accomplish enhancement objectives.

Beautification projects, restoration of important structures, and development of the bicycle and pedestrian network should be the primary focus of the DARTS Enhancement effort. However, any project that evolves from these guidelines should be considered for development as an enhancement project.

For more information on any or all of the elements presented here, please refer to the Dougherty Area Regional Transportation Study, 2015 Transportation Plan. A copy may be obtained by contacting the Albany-Dougherty Planning Commission.



Map 23 Map of Albany Metropolitan Planning Area

ATHENS

ATHENS-CLARKE-OCONEE REGIONAL TRANSPORTATION STUDY (ACORTS)

prepared by: Athens-Clarke-Oconee County Planning Commission

ACORTS is actively working to develop facilities and services that offer new ways of traveling, and making the networks already in place work more efficiently. Our goal is to enhance Athens' role as a critical transportation hub for the Northeast Georgia region.

The Athens-Clarke County Planning Department is the transportation planning agency for the metropolitan Athens area. It will be developing a draft twenty-year transportation plan to meet the requirements of the Intermodal Surface Transportation Efficiency Act ("ISTEA"). The plan will consider transportation linkages within Athens, and also between Athens and Northeast Georgia.

Facility Improvements

One critical project underway is completion of State Route 316, now named University Parkway. The Parkway provides an important connection between Atlanta and Athens, beginning at I-85 and going to the Athens Perimeter. University Parkway received its name in recognition of the close ties that bind Athens and the University centers in Atlanta.

Another road project, Epps Bridge Parkway, will continue the University Parkway connection from the Athens Perimeter to Atlanta Highway, the major east-west route through the metro area. This project has the distinction of including medians, bikeways, sidewalks and landscaping as integral features, and ISTEA enhancement funding as part of the overall project.

Three enhancement projects are also underway, which will combine to provide the first major leg of the proposed bikeways network in Athens. The College Station Road bike lane improvement is part of a gateways project that will enhance the Olympic venue route for the soccer finals in 1996. The East Campus bikeways system is being developed as an integral part of a major campus expansion for the University of Georgia. The Heritage Trail will link the East Campus to downtown east Athens via a historic greenways route along the Oconee River.

The Athens Multi-Modal Transportation Center is another critical transportation component for the metropolitan area. Design is now underway for the Center, which will be a central transfer/parking facility for downtown and university auto traffic, Athens Transit and University of Georgia Transit systems, intercity bus, private services, bicycles and pedestrian travel. The Center will also include provisions for commuter rail service between Athens and Atlanta, which the Athens community strongly supports.

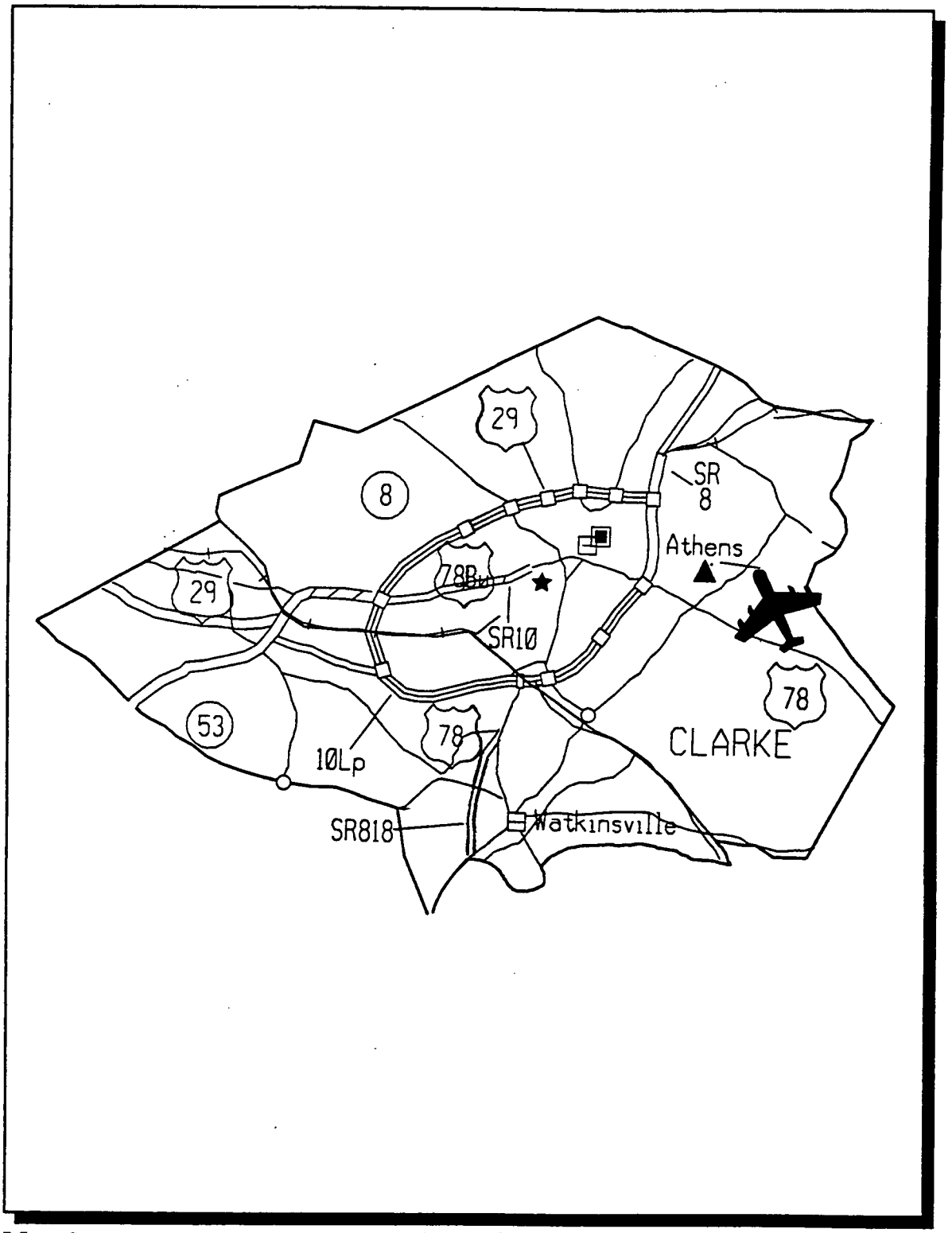
Operations Improvements

Under ISTEA, intermodal linkages will be an important consideration in overall transportation system development. April, 1994 saw the reopening of the control tower at Athens/Ben Epps Airport. Air traffic control service had been absent since the controller strike of 1981. The reopening moves the airport to a "Positive Controlled Airport" designation and makes a substantial contribution to safe operations for air traffic.

As part of a strategy to make existing transportation facilities work better, ACORTS will be developing an "Incident Management Plan." Incident management coordinates emergency service and transportation personnel to help relieve congestion due to accidents, weather-related problems or special events (such as University and Olympic games).

Lastly, ACORTS is identifying operational safety and multi-modal travel in its Scenic Corridor Assessment studies. Scenic corridors are travel routes that provide incoming visitors with a first impression of a community; as such, it is particularly

important that they be both safe and aesthetic in appearance. Transportation issues become involved with scenic concerns as roadway design balances landscaping with sight-distance, or bicycle and sidewalk facilities with curb cut policies. Each gateway in the metropolitan Athens area will be the focus of special study as roadway improvements are considered in the corridor.



Map 24 Map of Athens Metropolitan Planning Area

BRUNSWICK

BRUNSWICK AREA TRANSPORTATION STUDY (BATS)

prepared by: Glynn County Community Development

The Glynn County Metropolitan Planning Organization (MPO) is currently updating the Brunswick Area Transportation Study (BATS) to incorporate strategies which facilitate mobility and minimize traffic congestion. As the urban area expands and the population increases, the transportation system will be planned to provide a safe and adequate transportation network for local citizens, industries and the port.

The Glynn County MPO is the newest MPO in Georgia, created as a result of the 1990 census. The dynamic coastal environment serves as a major deep water port, industrial area, and tourist destination.

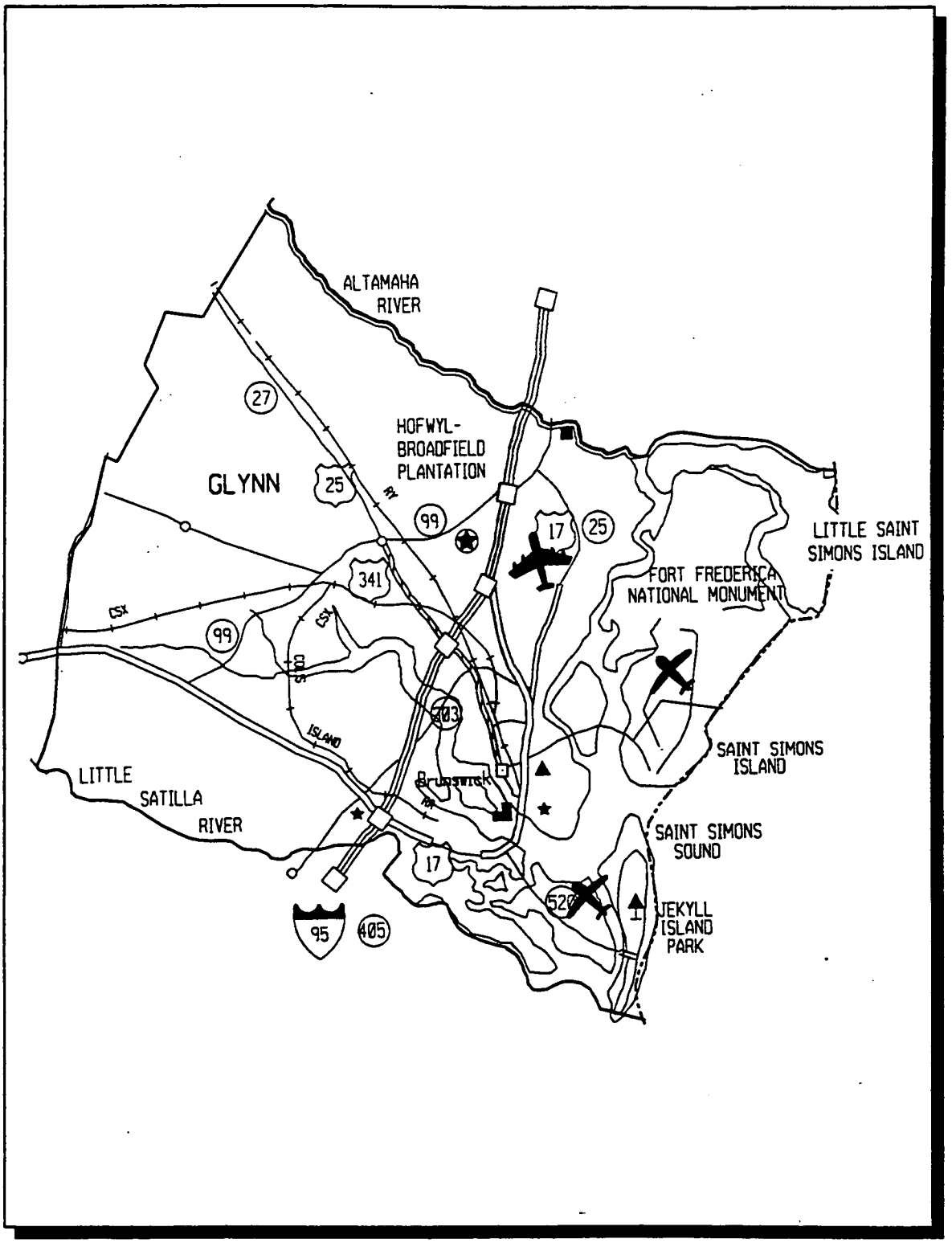
The Georgia Ports Authority operates a rapidly expanding port facility in the City of Brunswick. The port development will increase with the completion of a new, high rise Sidney Lanier bridge, planned for construction in FY 1996 at the mouth of the Brunswick Harbor. The bridge will accommodate ships of larger sizes and will facilitate growth at Colonel's Island and Brunswick.

The BATS must ensure an adequate and safe transportation network including ground, air, and rail facilities to allow access to the port and industries. Increased port access provides vital markets to both the local industries, such as the Georgia Pulp and Paper Mill and Hercules, Inc., and to inland markets. The existing highway network is being enhanced through several projects. Projects serving regional travel are the widening of I-95 and the Golden Isles Parkway. I-95 will be widened to six lanes, with a design which facilitates widening to eight lanes. Other significant projects are the extension of SR 25 Spur approximately four miles to intersect with US 341 and the completion of Martin Luther King Blvd. as a major north - south artery in Brunswick. An additional significant project is the widening

of L Street. L Street will be widened from US 17 to US 341. This network will facilitate projected growth and development throughout Glynn County.

The BATS plan will address the impact of growth and tourism on the St. Simons Island transportation system. Wetlands and tree preservation concerns severely limit the ability to provide congestion relief. In December 1993, Post, Buckley, Schuh and Jernigan completed a public transportation study which included recommendations for a ferry between St. Simons and Jekyll islands and a fixed route bus system for the county. The MPO is currently conducting a county-wide pedestrian/bicycle plan as a means of reducing single and/or low occupancy vehicle trips.

During 1994, the BATS will be coordinating with the Comprehensive Planning Process for the county. Land use, major developments and public facilities will be identified and the impact on the transportation system evaluated.



Map 25 Map of Brunswick Metropolitan Planning Area

MACON

Macon Area Transportation Plan (MATS)

prepared by: Macon-Bibb County Planning & Zoning Commission

General Description

The geographic coverage of the MATS area consists of Bibb County plus the south western portion of Jones County. The population within the MATS area was 159,879 in 1990, up 1.6% from 1980. The City of Macon lost 8% of its population during the 1980's, yet Macon remains the economic center of the MATS area and all of middle Georgia. In 1990 Macon contained over two thirds (67%) of the MATS population.

In contrast to population growth, the MATS area has maintained a dynamic economy due to a healthy growth rate in jobs that has been sustained for decades.

Highway Facilities

The dynamic MATS economy has generated transportation needs faster than the static MATS tax base could fund them. This predicament has been alleviated with the passage of a five-year local sales tax in November of 1994. The sales tax will generate up to $130,000,000 in local funding for approximately $369,000,000 in projects.

Among the projects included in the plan are: South Downtown Connector, Northside Drive, Vineville Avenue, Eisenhower Parkway Extension and improvements to Interstates 16 and 75.

Bicycle and Pedestrian Facilities

In FY 1994 a Bikeways and Pedestrian Facilities Plan was prepared. This Plan serves as an update of previous Plans and was the first Plan to include a pedestrian component.

In addition to the four bikeways previously established, the 1994 Plan includes several new bikeway proposals. Walkway plans include a crosswalk over M.L.King Jr. Boulevard as part of the Pedestrian Plaza enhancement project. In addition, there are numerous sidewalk projects scheduled in conjunction with future road improvements.

Transit Planning

Maintaining current levels of service and meeting ADA requirements will be the primary focus of transit. The Transit Authority contracts with the Older Americans Council (OAC) to provide paratransit service beyond the fixed route service area.

The local sales tax referendum passed in November of 1994 includes $2,000,000 for the Transit Authority.

Railroad Facilities

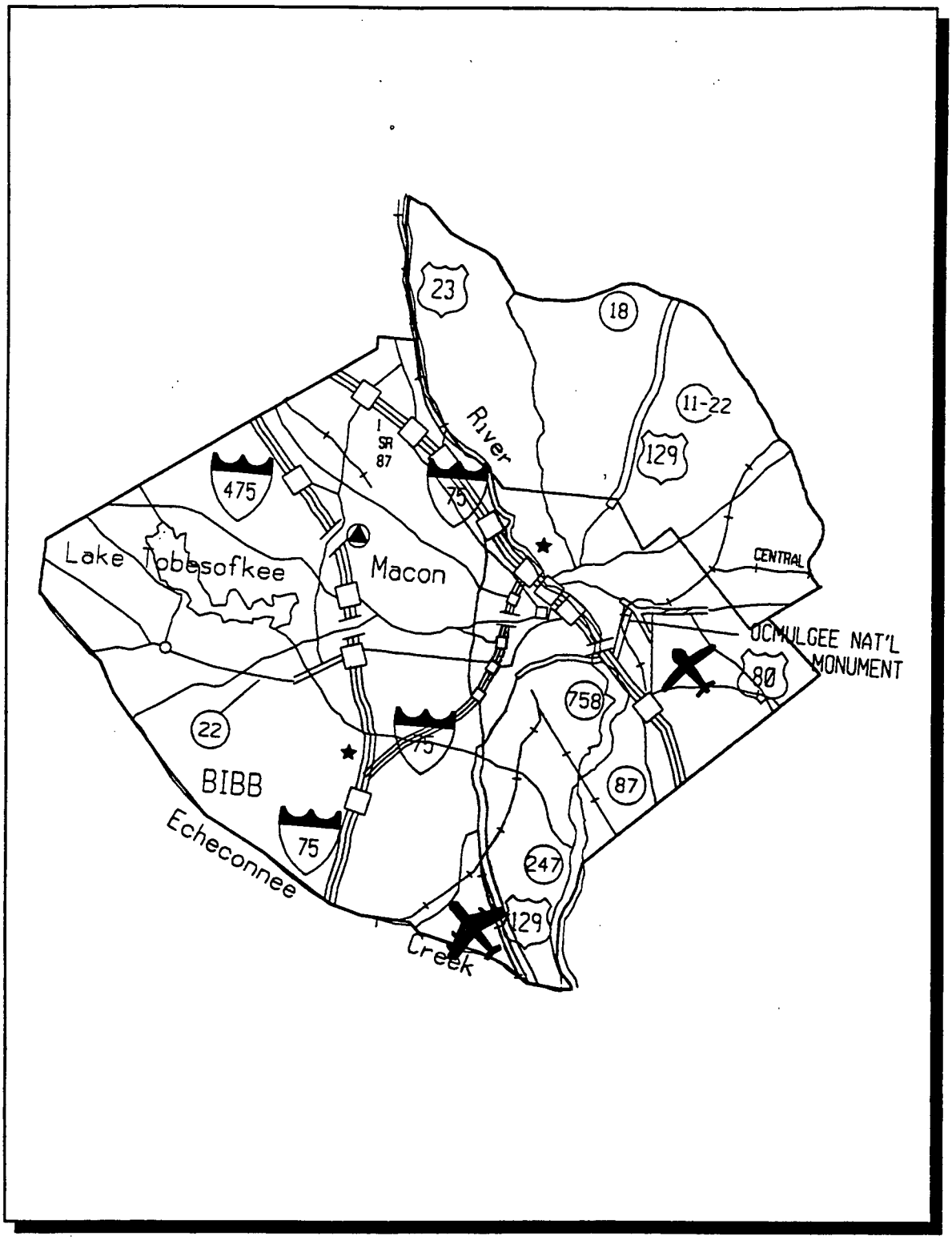
At one time, Macon was the railroad hub of the South. Currently, the only active railroad lines are CSX and Georgia Central Railroad. These two lines bring freight into the Macon-Middle Georgia region, but do not provide multimodal interconnectivity with other modes in the region. There is no passenger service available at this time, however, the community is interested in having future passenger rail service which could include AMTRAK as well as other passenger service alternatives.

Middle Georgia Regional Airport

The Middle Georgia Regional Airport is located in the south east corner of Bibb County. It has one 6,504 foot runway and one 5,000 foot runway.

Herbert Smart Downtown Airport

The Herbert Smart Downtown Airport is located approximately four miles east of Macon's Central Business District. It has one 4,696 foot runway and one 3,600 foot runway.



Map 26 Map of Macon Metropolitan Planning Area

ROME

FLOYD-ROME URBAN TRANSPORTATION STUDY (FRUTS)

prepared by: Rome-Floyd County Planning Commission

General Description

The Floyd-Rome Urban Transportation Study (FRUTS) serves an area of approximately 51,589 people (1990). Floyd County is the largest county in the northwest section of the State of Georgia both in terms of geographic size and population. The county is situated in the middle of a triangle defined by three metropolitan areas: Atlanta, Chattanooga and Birmingham. The local road network is impacted by the mountains and three rivers which surround Rome. Historically, Floyd County's population growth has been stable. The decade of the 1980s was characterized with a low population growth and stable pattern of expansion, and this data was used to project transportation needs into the future. Employment growth projections are assumed to be proportionate with the county's population growth.

Highway Facilities

The principal link from Floyd County to the National Interstate highway system is US Highway 411 which travels east from Rome 25 miles into Bartow County and Interstate 75. Travel through and to Rome is served by several other major travel corridors, including State Route 20, State Route 53 and US Highway 27. A bypass system has been planned to provide east-west and north-south traffic movements through Floyd County without having to pass through the City of Rome. To date, the eastern and northern portions of the bypass system have been constructed.

Bicycle and Pedestrian Facilities

The Rome-Floyd Bicycle and Pedestrian Plan seeks to link together the cultural and historic heritage of the area through an alternative transportation network of pedestrian and bicycle facilities. The Bicycle and Pedestrian Plan consists of both short and long range projects that will develop intra-county linkages between

residential areas, commercial areas, recreation sites, cultural sites, colleges and historical sites. The development of the system will provide a scenic trail system which allows quick, efficient intermodal transportation routes.

Rome Transit Department

The City of Rome through the Rome Transit Department (RTD) operates several public transportation services. RTD serves mainline routes and tripper routes for the Rome City schools. RTD contracts with the Tallatoona Community Action Agency to provide accessible paratransit bus service. RTD has identified vehicle replacement as its priority capital need. It is difficult to make long-term financial forecasts for RTD's transit service because it is difficult to predict the availability of federal financial assistance and the local financial commitment.

Richard B. Russell Airport

The Richard B. Russell Airport is a County owned and operated facility located in north-central Floyd County. It is the largest general aviation facility in the State without a full time control tower. It has a 6,000 foot runway, two 4,000 foot runways, various navigational landing systems, and a new terminal building. Additional hangar space continues to be added along with taxiway lighting improvements and other enhancements.

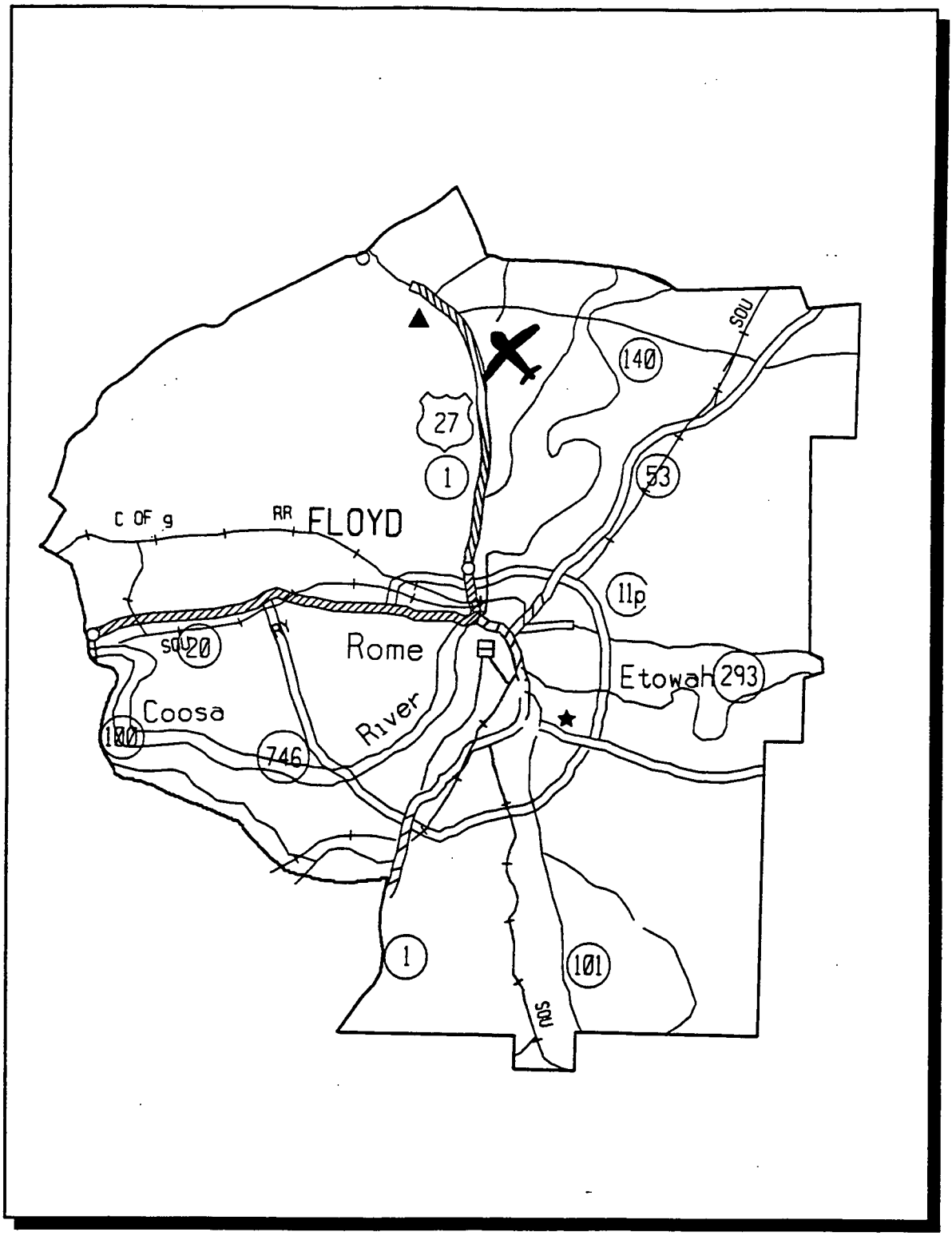
Railroad Facilities

Railroad Facilities in Rome and Floyd County include the Norfolk Southern Corporation (NSC) System. There is no scheduled passenger service; however, the railroad provides freight service to several industrial sites in the County. The NSC has initiated several at-grade crossing improvements within the study area. The City and the NSC are working to remove several at-grade crossings from the system for the purpose of safety enhancement.

Mayo's Bar Lock and Dam

The Mayo's Bar Lock and Dam is a historic structure that will be rehabilitated for the purpose of facilitating navigation of the Coosa River. The restoration of the Dam would link Rome to Lake Weiss, Alabama. The rehabilitation is being funded with

Special Purpose Local Option Sales Tax money and with Georgia DOT Transportation Enhancement funds.



Map 27 Map of Rome Metropolitan Planning Area

SAVANNAH

Chatham Urban Area Transportation Plan (CUTS)

prepared by: Chatham Co. - Savannah Metropolitan Planning Commission

The Chatham County/Savannah metropolitan area has been able to make substantial improvements in all forms of transportation over the past several years due, primarily, to the advent of the one-percent local option sales tax combined with the generous support and assistance of the Georgia Department of Transportation.

The overwhelming acceptance of the voters in Chatham County for the one-percent tax program has provided the financial base for a vast array of roadway and other improvements for the last nine years, since 1985. In addition, the adoption of a 1.3 mill dedicated property tax provides a stable funding base for operating and maintaining an excellent public transportation system.

Without this financial support, the transportation plan and program would have remained as it was just ten years ago when all that could be accomplished was an occasional road widening or resurfacing project with a public transportation system that was on the verge of collapse. Traffic congestion was evident throughout the major street and highway system at that time and many of the local streets remained unpaved and poorly maintained.

The 1989 long-range transportation/land use plan for Chatham County is being realized, with many of the prescribed projects now in service or under construction. Two major freeways are currently being implemented and a number of important city streets are being widened and improved. Also being implemented are several "developmental roadways" that were included in the Plan to accommodate growth in those locations within the County that can be conveniently served by the infrastructure systems. Most of the unpaved local streets within the City of Savannah and the smaller municipalities have also been improved and surfaced.

Public transportation is designed to play an important role in the transportation system for the future in Chatham County. Chatham Area Transit (CAT), with professional management, has made extensive revisions and improvements to the fixed-route bus system over the past several years. It now operates a fleet of 55 modern coaches that offer clean, comfortable, and convenient service to the residents of the City at a reasonable fare.

System improvements that are programmed for the near future include a new shuttle system in the downtown area using four electric powered vehicles, a new transfer station at a convenient southside location, and the expansion of the fixed-route service County-wide. CAT purchased new transit coaches under the provisions of the ISTEA Surface Transportation Program (STP) wherein Federal funds can be utilized for either roadway or transit system improvements.

Chatham Area Transit also provides demand-responsive transportation for the mobility handicapped through its TeleRide system. This service is rapidly gaining in popularity and is currently providing about 3,500 one-way trips per month using twelve specially-equipped vans. Service was recently expanded County-wide and a professional management firm was contracted to provide the service under the direction of CAT and an advisory committee composed of service participants.

Chatham County/Savannah will be hosting yachting events during the 1996 Olympic Games. In preparation for these events, an extensive restoration and beautification program has been authorized under the special provisions of the ISTEA program. These enhancements include a number of landscaping improvements throughout the County, the restoration of the Visitors Center, the completion of a multipurpose trail, and extensions of a bikeway consistent with the Bikeway Plan for Chatham County.

The importance of the Port of Savannah to the economy of the region as well as the State of Georgia cannot be overemphasized. In this regard, a very costly three-stage improvement program for waterborne access to the port has just been completed consisting of the Talmadge Bridge replacement, increasing the clearance from 150' to 185', widening the channel from 400 to 500', and, finally, deepening the

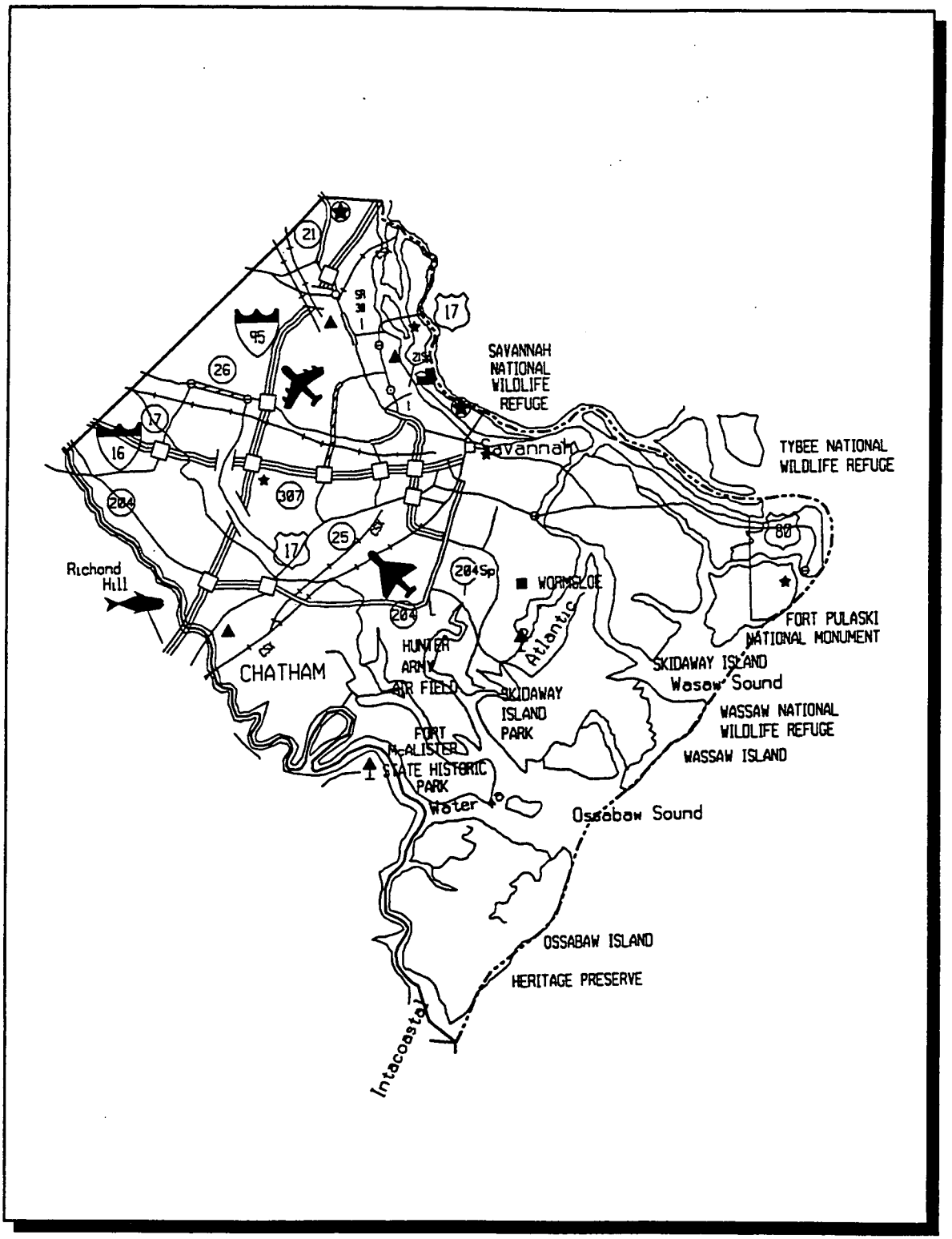
channel from 38 feet to 42 feet. In the planning stages is a landside access study designed to improve the efficiency of both rail and truck access to the ports. These improvements will keep the Port of Savannah competitive well into the 21st century.

A particular factor which makes the Port of Savannah important is the need for the rapid deployment of military equipment. Savannah has a strong military influence due to the close proximity of both Fort Stewart and Hunter Army Airfield to the area. Fort Stewart is only 40 miles from the Port of Savannah, making the Port ideally situated to handle the deployment of equipment. It is, therefore, important to maintain efficient access to the Port from Fort Stewart and Hunter Army Airfield by both highways and rail.

Savannah is an important rail passenger center, in addition to being a significant rail freight center. Savannah is served by Amtrak's major north-south rail services along the east coast. Three trains serve Savannah - the Silver Star, Silver Meteor, and the Palmetto. Each of these services travel between Miami and New York daily.

Recently, the Savannah International airport completed the construction of a new terminal facility with direct access via a new interchange on Interstate 95. This new $68 million facility increases the number of available gates and provides state of the art passenger amenities. The design of the facility also provides for future expansion should air travel passenger demand dictate.

Several chronic problems are yet to be resolved in the transportation system plan for Chatham County - excessive traffic within the renown Historic District and saturated traffic conditions on the western section of DeRenne Avenue. Lack of convenient parking in the central area of Savannah is also perceived by many as an important issue to address. The planning process continues to actively examine options for resolving these issues.



Map 28 Map of Savannah Metropolitan Planning Area

WARNER ROBINS

WRATS TRANSPORTATION PLAN

prepared by: Warner Robins Department of City Development

General Description

With the completion of the 1980 Census, the Warner Robins area was officially designated as an urbanized area. The Warner Robins Area Transportation Study (WRATS) planning area is home to approximately 74,950 people (1990), having grown from 63,364 in 1980. The WRATS area includes northern Houston County, a small portion of Peach County and the Cities of Centerville and Warner Robins. The study area covers approximately 100 square miles of land area which includes Robins Air Force Base. The average population density for the study area is approximately 641 people per square mile, while the density for the City of Warner Robins is 2,558 people per square mile. Today, Warner Robins and the surrounding area is one of Georgia's fastest growing urban areas. From a population of 50 in 1940, Warner Robins has grown to a population of approximately 45,000. Growth in the unincorporated areas is attributed to intense development in the urban fringes outside of the cities, which has resulted in a sprawling development pattern that is more difficult for local governments to service.

Highway Facilities

There are three major arterial routes traveling through the study area. The most traveled is Interstate 75 with an average daily traffic volume (ADT) of over 50,000 vehicles. This route provides access on the north to Macon, Atlanta and beyond, and to the south to South Georgia and Florida. The other two routes are US-129/SR-247 with an ADT of almost 16,000 and SR-247C/Watson Boulevard with an ADT of over 22,000. US-129/SR-247 provides access to the City of Macon and Bibb County and is used mainly as a commuting route to Robins Air Force Base. SR-247C/Watson Boulevard is the backbone of the City of Warner Robins. This

route connects Warner Robins, Centerville, and the northern portion of Houston County with I-75. Also, located along Watson Boulevard are a number of the area's commercial businesses. Several other arterial highways traverse the area. They include: US-41/SR-11, SR-96, SR-127, and Houston Lake Road. These routes provide easy travel within the county and afford access to surrounding counties. The average daily traffic for each of these routes varies depending upon the approach and departure of each municipality in the county.

Bicycle and Pedestrian Facilities

In June 1994, the MPO completed the development of a Bicycle and Pedestrian Plan and Program. The Bicycle and Pedestrian Plan was developed concurrently with the Transit Feasibility Study, in order to effectively study the intermodal transportation needs of the metropolitan area. The Bicycle and Pedestrian Study presents a plan for pedestrian and bicycle improvements that would be integrated into the overall transportation system of the community. The goal is to provide safe, convenient, and economical transportation to all the residents and workers in the community, as an alternative and supplement to motorized transportation. The plan includes an inventory of the existing transportation facilities and pedestrian pathways and the needs of cyclists and pedestrians. The plan also determined the feasibility, costs and types of bicycle and pedestrian paths that are needed in the study area.

Transit Facilities

The Warner Robins area has no public transit system. This issue was first examined during 1983-1984 through a study conducted by a transportation consultant. The study found that transit was not feasible, due to low projected ridership and a high operating deficit. In order to address the multi-modal guidelines of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), a new transit feasibility study was undertaken in 1994. The MPO worked with a multidisciplinary engineering and planning firm to produce a technical study to investigate the feasibility of installing a small mass transit or para-transit system within the urbanized area. The report is a comprehensive analysis of the potential for implementing a public transit system for the City of Warner Robins and the

surrounding areas. The plan explored the effects of special generators such as Robins Air Force Base, the Air Museum and other defense related industries. This study also found that it is unlikely that the Warner Robins MPO would greatly benefit from traditional fixed route transit service, at this time. However, it is likely, that area residents could support a combination of ridesharing, coordinated human service agency transportation and a hybrid paratransit/scheduled route system.

Airport, Railroad and Bus Facilities

The WRATS area is served by one rail line, Norfolk Southern, which traverses the eastern section of the area, parallel to SR-247 and serves Warner Robins and the Robins Air Force Base. Norfolk Southern has no train stations, depots or railyards in the study area, but most of the rail facilities and switching yards are in Macon.

Airline service is provided by Macon's Louis B. Wilson Airport. The facility is located nine miles north of Warner Robins in Bibb County. Although the airport is located between US- 41 and US-129/SR-247, access to these routes and to I-75 is less than desirable. Located on SR-96, southwest of Warner Robins, is a very small unimproved airport facility accommodating only small aircraft. At this time, the Air Park is not a vital link in the transportation system. Robins Air Logistics Center, USAF, is located adjacent to Warner Robins. This facility generally serves military aircraft, but accommodates some civilian aircraft concerned with base-related matters.

Commercial bus service is available in the area through Greyhound Bus Lines, with all northbound buses stopping in Macon. The southbound departures travel to Hawkinsville and Jacksonville, Florida. There are also three private bus lines which provide charter service to Robins AFB from outside communities.

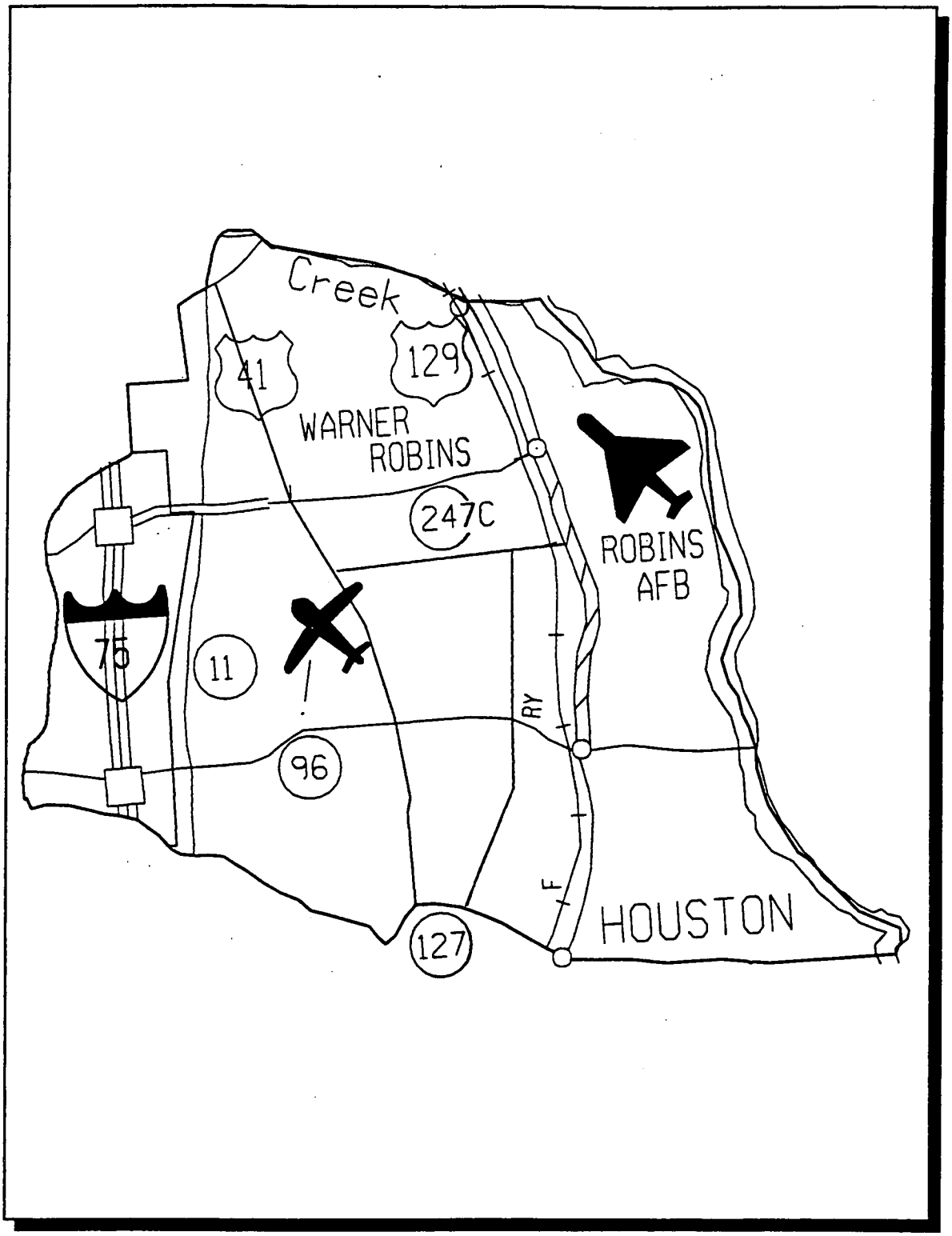
Transportation Plan

The WRATS Interim 2015 Transportation Plan outlines several significant transportation problems. One of the area's major problems is a lack of north-south routes. SR-247, Houston Lake Boulevard, and US-41 are the only north-south

routes which extend the breadth of the urban area. Related problems are the lack of route continuity, over use of stop signs and off-set intersections. The continuity problem and over use of stop signs extends to collector routes in residential areas. Another hindrance to improving the transportation system performance is the location of Robins Air Force Base (AFB), the area's dominant traffic generator. Robins AFB is located on the extreme northeastern fringe of the urban area and is only accessible on its western side. Since the traffic is not uniformly distributed to enter from two or more directions, congestion naturally occurs.

Traffic volumes are expected to substantially increase on most arterial and collector routes by the year 2015. The higher volumes on east-west routes are a result of employment at Robins AFB and the westward sprawl of commercial and residential development. Industrial development in the Perry area and the gradual creep southward of low density residential development, will result in significant traffic volumes on some north-south routes.

Even with full implementation of the transportation improvement plan, several streets will experience congestion in the year 2015. However, the congestion and stalled traffic will be less than if the plan were not implemented. Planned improvements are of three types: (1) reconstruction and widening of existing routes, (2) extension of existing routes and construction of new routes, and (3) implementation of transportation system management projects (TSMs), which are designed to correct problems at a specific intersection or location.



Map 29 Map of Warner Robins Metropolitan Planning Area

RESOURCES:

Financing Transportation in Georgia

Georgia has three major sources of funding public sector transportation programs: Federal, State and Local funds. These sources represent the traditional means for carrying out capital projects, maintenance and operations of programs, research, planning and other transportation initiatives. The State collects seven and one-half cents motor fuel tax per gallon. For tax purposes, "motor fuel" includes gasoline, diesel fuel, gasohol, LP gas (liquid propane) or any other substance that could be used as a motor fuel. In addition, State law levies a retail motor fuel sales tax at the rate of three percent (3%).

Georgia's motor fuel tax collection is the third lowest in the nation. Per gallon state motor fuel tax rates range from 7.5 cents to 30 cents per gallon nationwide, with five states charging less than 15 cents.

The Georgia General Assembly funds select transportation programs from General Fund appropriations or through the issuance of General Obligation Bonds. In the past, this source of financing has been used to fund local roads, the developmental highway program (Governor's Road Improvement Program), construction of the new Savannah Bridge and toll road development. General Funds appropriations and general obligation bonds also fund intermodal projects in rail, ports, aviation, and public transportation modes.

Another major source of financing transportation activities is Federal funds including:

- Highway Trust Funds
- Mass Transit Account of the Highway Trust Fund
- Aviation Trust Fund
- Harbor Trust Fund
- U.S. Forest Service
- National Park Service
- Appalachian Development Commission
- General Treasury Funds

- Defense Highway Funds
- Coast Guard Funds
- Lake Access Funds

Trust Funds are dedicated to aviation, ports and highways. The Aviation Trust Fund is funded by user fees from the sale of aviation fuels and related items. The Harbor Trust Fund is financed through user fees levied on the value of goods shipped. The Highway Trust Fund is derived from user fees on motor fuels (approximately $490 million annually for Georgia). Congress dedicated one and one-half cents of federal motor fuel tax to mass transit. These moneys accumulate in the Mass Transit Account of the Highway Trust Fund and can only be used for transit capital improvements and planning of transit projects. Funding for transit is authorized through Title III of the Intermodal Surface Transportation Act (ISTEA).

Federal law specifies the use and the process for funding projects through Trust Fund allocations. Public transportation (except capital and planning funding from the Mass Transit Account of the Highway Trust Fund) and Rails do not have a Trust Fund mechanism to finance projects. Federal funding for public transit and for railroad projects are usually from General Treasury Funds.

Most federal agencies recognize the importance of transportation and make allowance for project funding that supports national programs. These 'special' funding categories are normally restricted as to the type of project that can be undertaken.

- Forest Highway (approximately $446,000 annually to Georgia DOT) funds are limited to projects that improve access to the U.S. National Forests. In addition, proposed Forest Highway projects must meet renewable resource analysis. All projects for Forest Highway funds must be selected in concert with the U.S. Forest Service and placed on a multi-year program of projects with agreed on priority

- National Park (approximately $517,000 annually to Georgia DOT) funds can only be used inside a national park and projects must be selected in consultation with the National Park Service. All project nominations are generated by the National Park Service.

- Appalachian Regional Commission funds (approximately $3.4 million annually to Georgia DOT) are restricted to use on the Georgia portion of the Appalachian Highway as approved by the Appalachian Development Commission. Appalachian Development funding can be transferred to non-highway purposes, if approved by the Appalachian Regional Commission.

- General Treasury Funds (approximately $8.2 million annually to Georgia DOT) apportioned by Congress, this source targets specific transportation projects. It can be the source of federal funding for some public transportation, railroad projects and demonstration projects.

- Defense Highway Funds (approximately $363,000 annually to Georgia DOT) are allocated for projects serving military base needs and the Strategic Highway Corridor Network. These funds must be requested by the Department of Defense and approved by Congress

- Coast Guard funding (discretionary funding tied to approved projects) is used to remove and replace bridges declared a hazard to navigation under the Truman/Hobbs Act, such as the Sidney Lanier Bridge. The match required for these funds can be as high as 50%, and the U.S. Coast Guard decides allocation of cost for each bridge project.

- Lake Access Funds (approximately $391,000 annually to Georgia DOT) are appropriated by Congress and are restricted to projects designated specifically in legislation.

Georgia Funding

Distribution of moneys from the Trust Funds is not equitable. Georgia is a "donor state", paying more federal motor fuel tax into the Highway Trust Fund than what it receives in highway funding. The current funding formulas in the Intermodal Surface Transportation Efficiency Act (ISTEA) do not favor Georgia. In the latest federal budget, Georgia ranked forty-fifth among States in the Nation with a rate of

return of 84.8 cents on each federal tax dollar collected. This situation is worsened by federal spending at levels less than the amount originally authorized.

As a first step, in funding the transportation program, Congress establishes an authorized multi-year budget for transportation. Next, Congress must annually appropriate the spending level. Historically, Congress has appropriated less than the authorized multi-year budget. This results in the accumulation of unspent dollars in the Highway Trust Fund and under financing of the transportation program. ISTEA originally promised an authorized multi year budget, but has only delivered the obligation (see Table 6, page F-4).

Georgia ISTEA Funding
(Highway only: ISTEA Title 1)

Year	Authorization	Obligation	Shortfall
1992	$540,159,000	$480,152,000	$ 60,007,000
1993	$588,662,000	$473,146,000	$115,516,000
1994	$590,775,000	$518,922,000	$ 71,853,000
1995	$589,709,000	$504,849,000	$ 84,860,000

Table 6 Source: GDOT - Office of Programming

Federal funding for highways, bridges and transportation enhancement activity projects come from the Highway Trust Fund, authorized through Title I of ISTEA. Federal aid eligibility covers all roadways, except those classified as local roads or rural minor collectors. Funds can be spent on any bridge that qualifies for rehabilitation or replacement based on specified federal standards. In addition, projects must meet standards and certifications set by the Clean Air Act Amendments of 1990, Federal Water Pollution Control Act and other federal laws that influence transportation project development. All federal funds require a match

from state and local sources; with few exceptions, 20% match is typical for most federally funded projects.

Department activities are enhanced by local government participation. Local governments contribute to projects not on the State Highway System through purchase of right-of-way and financing utility relocations. Local governments may provide match funds from local sources, which may include private donations. The Department of Transportation also receives limited funds from the General Assembly to finance up to one half of the local share match of needed capital funds for intermodal projects.

Future Prospectus

Long range transportation needs have been identified in the statewide plan. The following summarizes needs based on the Statewide Transportation Plan's recommended program for the next 20 years.

Highways: Continued maintenance of the existing system, expansion of capacity improvements to the operations system, development of GRIP and implementation of ITS technological applications.

Public Transit: Expansion of rural public transportation from its current level of county programs to all rural counties, expanding urban public transportation in small and medium-sized urban areas, such as Valdosta, Warner Robins and Brunswick, and into the Atlanta suburban areas. This program would also provide for State participation in financing of transit capital and operating assistance.

Rail: The rail program would rehabilitate rail freight lines and develop a rail passenger program. This program would include both commuter and intercity rail service initiatives. In addition, the rail initiatives include development of the Atlanta Multi-Modal Passenger Terminal.

Ports: The transportation program provides for improvements to Brunswick Harbor, improved multi-modal access to ports and continuation of the port maintenance program.

Aviation: Recommendations for the aviation program are incomplete pending completion of the Statewide Airports System Plan. In the interim the state aviation planning effort calls for continuation of the Airport Development, the Airport Operations Improvement, and the Approach Aid Programs.

Bicycles: The draft bicycle plan calls for development of bicycle corridors that will support bicycle mobility statewide. The draft Statewide Bicycle Plan will propose staged development of bicycle facilities by signing bike routes, developing wide shoulders for bicycle use on existing facilities and bike lanes.

Financing of transportation will support programs identified as contributing to achieving the Vision developed in the Transportation 2000 effort. Strategic use of financial resources will be critical to providing quality transportation for Georgia's public and commercial needs. Table 7 below summarizes these needs:

Total Transportation System Needs

20 Year Forecast

(1994 $million)

Mode	Estimated Need	Anticipated Funding	**Additional Need**
Roads			
Highways and Bridges	$ 18,157.8	$ 12,266.2	$ 5,891.6
GRIP	$ 5,200.0	$ 2,500.0	$ 2,700.0
Local State Aid	$ 2,440.0	$ 1,272.0	$ 1,168.0
Public Transit[38]			
Capital	$ 237.2	$ 123.2	$ 114.0
Operating	$ 584.6	$ 291.7	$ 292.9

[38]Does not include Metropolitan Atlanta Rapid Transit Authority needs.

Mode	Estimated Need	Anticipated Funding	**Additional Need**
Railroad			
Freight	$ 265.2	$ 30.0	$ 235.2
Pax Rail			
Commuter	$ 671.0	N/A	$ 671.0
Intercity Rail	N/A	N/A	N/A
Atl. Multi-Modal	$ 125.0	$ 0.0	$ 125.0
Port Program			
S Lanier Bridge	$ 93.0	$ 58.4	$ 34.6
Maintenance			
Savannah	$ 29.2	$ 20.8	$ 8.4
Brunswick	$ 4.0	$ 3.6	$ 0.4
Aviation			
Hartsfield	$ 170.0	N/A	N/A
Other Airports	$ 360.2	N/A	N/A
Gen.Aviation[39]	$ 630.3	N/A	N/A
Total	$ 1,160.5	$805.2	$355.3
Bicycles[40]	$ N/A	N/A	$ N/A
TOTAL	$ 28,967.5	$ 17,371.1	$ 11,596.4

Table 7 Source: GDOT - Office of Planning

Transportation for the next two decades will require more funding than can presently be identified. Without additional funding, the present construction activity cannot be continued, new initiatives cannot be developed and quality of the transportation

[39]General aviation needs are being updated as part of the Aviation System Plan; this represents a projection based on current information.

[40]Will be identified upon completion of the Statewide Bicycle Plan.

program is compromised. There is a need to increase the funding for the total transportation program.

Any proposed increases in transportation funding will need to allow for funding for all modes. Financing of transportation will support programs identified as contributing to achieving the Vision developed in the Transportation 2000 effort. Strategic use of financial resources will be critical to providing quality transportation for Georgia's public and commercial needs.

RESOURCES:

ENVIRONMENTAL

Federal and State Laws and regulations guide the environmental considerations for all transportation projects, regardless of mode. Environmental statutes concerning noise, air quality, health, historic and archeological preservation, land and water use must be considered and addressed as part of project development. There are over 70 laws, regulations and Executive Orders to be considered in development of transportation programs.

Restrictions placed on construction by State and Federal environmental laws, regulations and Executive Orders, have made implementation extremely difficult and costly. Environmental requirements will continue to affect construction of new projects and reconstruction of existing facilities.

The National Environmental Policy Act and the Georgia Environmental Policy Act

The National Environmental Policy Act (commonly called NEPA) requires the preparation of environmental documents that summarize ambient effects of transportation projects on natural resources and habitats. In addition, there is the Georgia Environmental Policy Act (GEPA) which mandates evaluation of effects and public participation in consideration of alternatives.

Technical studies of the potential impacts, positive or negative, of transportation projects must precede preparation of summary documents. The technical studies must be approved by federal and state agencies with legal jurisdiction over environmental issues.

Endangered Species Act

Implementation of transportation projects, especially those requiring construction, is contingent on meeting environmental requirements. The Endangered Species Act requires surveys of threatened and endangered species, agency coordination on finding and mitigation methods and often, modifications to the transportation project's design or location. Most recently, the red cockaded woodpecker, wood

storks and the eastern indigo snake, all listed as endangered species, has required special treatment to assure the environmental soundness of a proposed project.

Endangered species will affect future transportation programs. Ten years ago Georgia had few threatened and endangered species. Today, there are 63 species on the endangered list protected under the Endangered Species Act. In the future, we expect to see hundreds of new species added to the list. The presence of endangered species will affect how transportation projects are constructed, and where. The law will have the same impact on local jurisdictions, private developers and projects under consideration by private citizens.

Federal Water Pollution Control Act and the Clean Water Act

Another area, which is carefully regulated, involves the placement of fill into the waters of the United States, including floodplains and wetlands. The goal of these two acts is to clean the waters of the United States while ensuring that additional wetland loss is stemmed. Projects which effect wetlands require a permit from the United States Army Corps of Engineers, or for water quality, from the Georgia Department of Natural Resources.

In situations involving wetlands, federal law requires avoiding impacts, where possible, minimizing adverse effects, where avoidance is not possible, mitigating loss. The impact of delays and cost to the transportation program has been substantial over the past ten years. Many alignments have been altered to avoid or reduce impacts to wetlands and many acres of wetland mitigated, by restoring degraded wetlands and creating wetlands. As a result there has been no net loss of wetlands due to the Department's preservation efforts.

OVER 70 Environmental Laws, Regulations and Executive Orders

Hazardous Materials Pollution

Pollution of the environment can be especially problematical in the case of hazardous waste sites and underground storage tanks. Where a transportation

project is affected by hazardous waste or storage tanks, the Department may identify, test, avoid or even pay to remedy site conditions, if the site is within rights-of-way.

For underground storage tanks, below ground studies are required. These studies identify potential leaks that can leach dangerous chemicals into the ground, and on to the underground water table. There are special actions that must be taken to prevent underground storage tank failures and to avoid subsequent leaks. Tanks are monitored and their condition is evaluated to decide if removal or other measures are needed.

Clean Air Act Amendments of 1990

Air quality is also a serious concern in the evaluation of transportation projects, especially in the Atlanta area that is in non-attainment for ozone. The Department does analysis of the air quality condition and evaluates project compliance with the Clean Air Act Amendments of 1990 (CAAA). Failure to meet CAAA standards in Atlanta could affect federal transportation funds for the entire state.

Georgia will need to meet the National Ambient Air Quality Standards by 1999. This will require that total emissions of volatile organic compounds in 1996 must be 15% below those of 1990; this will be a challenge in view of the anticipated increase in traffic projected for the next 20 years. Furthermore, each year between 1996 and 1999 Georgia must show an additional 3% decrease in total output of organic and nitrogen emissions. The CAAA represents one of the most challenging issue areas for transportation and air quality agencies nationwide.

Noise Standards

Another type of pollution is noise. Noise studies are done on new and existing roadways to determine the level of noise pollution from traffic. Noise abatement barriers are built, where they are feasible, effective and where the costs are within defined the financial limits.

Historic and Archaeological Preservation

Section 106 of the National Historic Preservation Act is yet another legal requirement targeted to protect cultural resources. The Act requires transportation projects consider effects to significant archeological sites and to historic resources eligible for the National Register. In isolated instances where there is no feasible and prudent alternative that avoids adverse effect, then the project development must include all possible measures to minimize harm.

Protection of Cemeteries or Burial Grounds

An extension in protection of cultural resources is the recent cemetery legislation and permitting requirements. The permitting process assures that abandoned family cemeteries or Native American burial grounds are not violated, and that measures deemed necessary, including disinternment and reinternment of individuals, are taken. The process includes preparation of an archaeological Report of Investigation or Letter of Findings by the Department's archaeologist stating the number of graves believed to be present and their locations. In addition, a plan is prepared by a qualified genealogist to identify and notify the descendants of those buried or believed to be buried in such a cemetery. If those buried are aboriginal or American Indian decent, the Council on American Indian Concerns and other interested tribal groups are notified. The purpose of the process is to avoid or mitigate the effects of planned activity on burial grounds.

RESOURCES:

TRAFFIC OPERATIONS

Operations of a safe and efficient transportation network will be a major challenge for the Department of Transportation over the next 20 years. The drive to a stronger role in transportation operations has accelerated in recent times. It was most apparent in the name change made from the Office of Traffic and Safety to Office of Traffic Operations. The focus on operations of a transportation network is implicit in the name and it connotes a fundamental change in the Department's direction. Even as the number of miles of roadway has stabilized because of less new construction, the number of lane miles is increasing due to projects adding capacity on the existing road alignment (that is four laning of roads to accommodate economic development, and passing lanes to address traffic safety concerns, etc.). At the same time, traffic will continue a steep upward climb over the next 20 years.

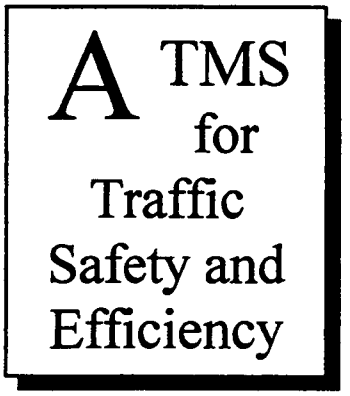
Making better use of the existing infrastructure is an absolute necessity. The information highway will need to be merged with the physical highway in order "to gather, share, and distribute information about our highway's operation condition." Real time communication is the key to increasing efficiency of systems operations. Up to the minute information gives the traveler alternatives and choices on a real time basis.

Both pre-trip and in-route traveler decision points require up-to-the-minute analysis. Accurate information can ease selection of alternate routes and times, and mid-course corrections. In addition, accurate and real time information permits quick response to interruptions in traffic operations due to breakdowns or accidents. Quick response permits immediate assistance to be dispatched returning traffic operations to normal with a minimum amount of interruption.

Much of the real time data sources is linked to newer technologies that are part of the Intelligent Transportation System (ITS). These include operation of AVI (Automated Vehicle Identification) technology on the Georgia 400 toll facility. The toll collection is accomplished by automated readers of toll cards in participating

vehicles. This allows vehicles to pass through the toll booths without stopping while the probe reads the account, automatically deducting the toll from a previously deposited amount. This program facilitates operations that are more energy efficient, environmentally responsible and produce a better operating system.

High occupancy vehicle lanes, identified in Georgia as Express Lanes, are an ATMS (Automated Traffic Management System) technique that will be put into operation within the next two years. Express Lane implementation would require the designation of a dedicated inside lane on the interstate to exclusive use of multiple occupancy vehicles (i.e. carpools, vanpools, buses and motor cycles). The use of video cameras will permit effective enforcement using a limited number of enforcement personnel. It also avoids the inevitable congestion that results from stopping violators during the rush hour. Express lanes are a proven technology that improves air quality and reduce congestion by increasing people movements. This is especially important in Atlanta, a non-attainment area, under mandate to reduce pollutants to improve the quality of life for residents and for visitors.



The Department of Transportation is implementing an Advanced Transportation Management System (ATMS) in preparation for the Olympics in 1996. The Atlanta ATMS will be one of the most advanced in the nation. The system is designed to relieve congestion by use of incident response teams, coordinating traffic signals across jurisdictional boundaries, installing cameras and detection systems to monitor the freeways and arterials, operating changeable message signs, highway advisory radio, kiosks and public media communicating to the motorists. The combination of these technologies will assist in operating a modern transportation system. These technologies will be operating from the GDOT's Transportation Management Center and/or local Traffic Control Centers of local governments. The Transportation Management Center and the Traffic Control Centers will be in close

contact with each other, thus coordinating, traffic operations on public street and highway networks.

The Safety Management System will complement ATMS technology using accident statistics, locations of drunk driver violations, emergency agencies responses, speeding violations and other related elements to identify projects that would prevent accidents and traffic incidents. ISTEA mandates the creation of Safety Management Systems. This system will be designed over the next year and will be in operation by Fall, 1995. Using Safety Management System output, Public Safety can target locations for surveillance and patrol, making their operations more efficient and effective. Currently, the Department predicts potential trouble areas for Public Safety; the Safety Management Systems will provide superior information on a real time basis.

Transportation management of operations using ITS technologies is a major factor in addressing congestion and environmental issues. However, in order to implement ATMS, there needs to be a funding base. With the Olympics in 1996, the Federal government has provided a springboard with a grant of $58 million to initiate the core ATMS system. Expansion of ATMS statewide would require an additional $200 million for implementation. Implementation of ITS will make Atlanta a showcase for demonstration of American technology to the world during the 1996 Olympics, and provide the base on which to expand Georgia's ITS system.

Although Atlanta is the only area in the State that is in CAAA non-attainment at this time, other Georgia cities are at risk. Consequently, expansion of the ATMS program statewide is an important public investment. Other programs that involve traffic operations include access control, operation and maintenance of traffic control devices on the State highway system, railroad grade crossing programs, and safety design projects.

CONCLUSIONS AND RECOMMENDATIONS

Summary of Conclusions

Mobility is a key part of the strategic plan to provide Georgia's future generations with economic well being, environmental quality and a high standard of living. Achieving the mobility objectives of the Transportation 2000 Vision (T2000 Vision) will require public resolve, built on a firm understanding of the importance of transportation to Georgia's future.

Recommendations to implement T2000 Vision must be sensitive to trends in the social environment, to changes in transportation technology and to the role of transportation in accomplishing the State's goals for economic development, mobility, environment and quality of life.

Influencing factors include the following:

Economic development is a key issue for Georgia's future. Adequate transportation capacity to support state economic development objectives will require capital programs that include expanded capacity of the state's highways, rails, airports, seaports and public transportation systems.

- Georgia is becoming increasingly urbanized with larger proportions of our population living in urban areas. Demand for increased mobility, coupled with higher density development will require more concentrated efforts to reduce congestion and increase transportation efficiency. In addition, the growing elderly population in the state will create new demands for alternate forms of transportation responsive to the specialized needs of older citizens.

- Clean Air Act Amendments of 1990 (CAAA) place greater emphasis on strategies which shift transportation demand from personal vehicles to more extensive use of alternatives in air quality non attainment areas.

- Increased use of public transportation and changing travel habits will focus more attention on the need for public education and information on mobility options

- A greater number of Georgia's citizens may have limited or no access to automobiles in the future due to economics or physical condition. The elderly, physically challenged, poor and others will need to have access to social services, jobs, education, retail establishments and other areas of public business.

- Georgia's rural economies will be highly dependent on the quality of the state's highway network. Completion of the GRIP system will be an important requirement for creating competitive advantages in our rural areas.

- Intermodal transportation will be a key factor in the state's ability to compete in the global marketplace. Opportunities resulting from world trade agreements can be used to advantage if Georgia's industries have access to safe, reliable and efficient transportation services.

- Large portions of the transportation system are owned and operated by the private sector, authorities and city governments. Coordination between all of the transportation operators will be needed in support of commerce and trade.

- New ways of financing transportation will need to be identified including public / private partnering and use of toll financing.

- Transportation resources represent an important element of the State's economic development, and growth strategies. Accomplishing the State's goals for economic development, mobility, quality of life and environmental quality for citizens will require teamwork by all State agencies.

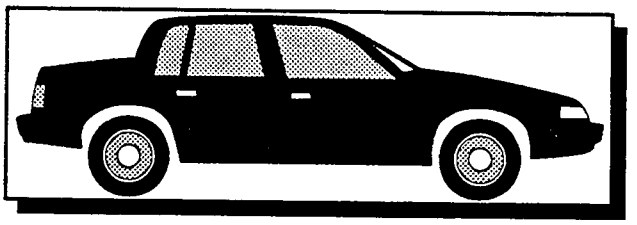
Summary of Recommendations

Transportation Planning

- The transportation planning process needs to be the basis for integrating multi-modal transportation into a unified state-wide program.

- Public involvement in the planning process should be broad based, including those impacted by the transportation program.

Highways and Bridges



- Maintaining Highways and Bridges and preserving the existing infrastructure is a continuing priority.
  The planning and design of new facilities should reflect sustainable transportation investments for which there is a commitment to maintenance and safety improvements.

- The Governor's Road Improvement Program (GRIP) is critical to the economic development of Georgia. The GRIP program needs to be completed as quickly as possible

- Transportation projects that improve mobility and support economic development have high priority. These include the Sidney Lanier Bridge, the Atlanta Multi-Modal Passenger Terminal, aviation improvements that expand air service, ITS and projects upgrading intermodal access.

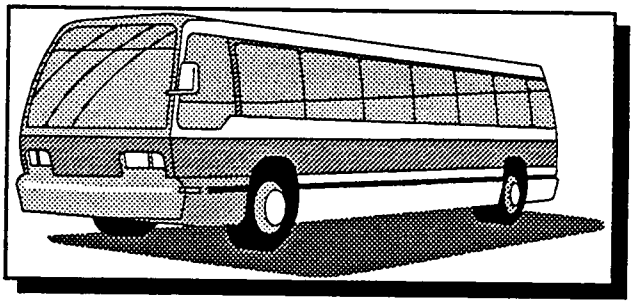
- Truck access routes are important to the state's freight movements. Truck connections to the State Highway System facilitate mobility and enhance economic development potential should have high priority.

- Regulations and permitting of freight movements should be reviewed to facilitate operations. Streamlining paperwork and coordination between state agencies should result in implementation of state-of-the-art technology improvements for commercial freight operations.

- A high quality local road system will be important to provide linkage to the state's highway system. Increased investments for resurfacing and rehabilitation of local roads and bridges will be critical

- Increased uses of public / private partnering can provide new opportunities for development, construction and operations of the transportation system. The ability to work together to accomplish state goals in economic development, the environment and mobility for all Georgians will require greater contributions from all participants.

Public Transit



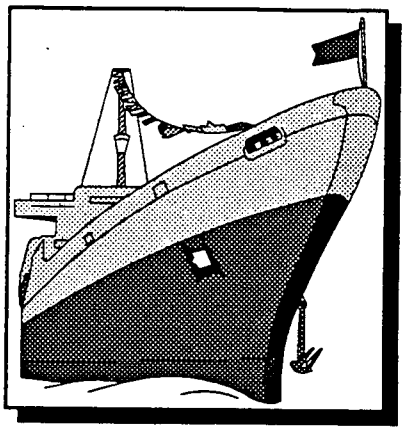
- Greater mobility is an important transportation goal. Expansion of the rural public transit programs will be needed to support access to jobs, retail services and help meet social service goals.

- Urban public transit services need to be expanded into small and medium sized urban areas. Urban public transportation needs to be flexible, reflecting the needs and goals of local area plans. Carpool

and vanpool programs that increase vehicle occupancy needs to be encouraged.

- The Georgia Department of Transportation and the Georgia Department of Human Resources and other units of governments should collaborate in development of a plan for transportation services to meet the needs of clients for access to social service facilities. The plan should address duplication of services, removing barriers limiting trip coordination and other related issues

Ports, Harbors and Waterways

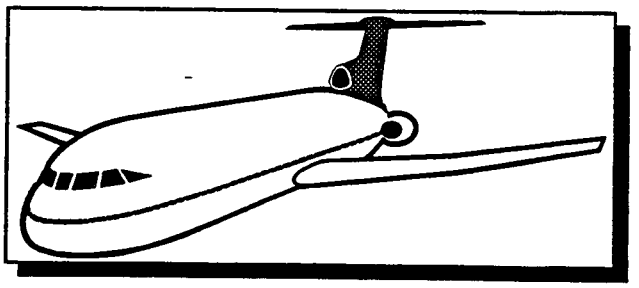


- The capacity of the state's Ports, harbors and waterways needs to be maintained and increased as necessary, to accommodate modern shipping vessels engaged in international trade.

- State investments in maintaining the navigation channels, and intracoastal waterways, deepening harbors, replacement of overhead bridges such as the Sidney Lanier Bridge is important to the future development of ocean ports and inland waterway ports

- Intermodal access to Ports needs to be optimized for efficient movement of goods and freight.

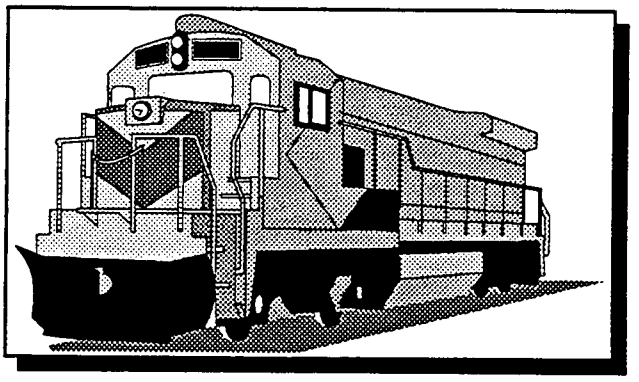
Aviation



- The Georgia Airport System Plan, currently under development, will consider the need

for investments in airports to increase capacity and improve safety and operating standards, and generate greater economic development opportunities in Georgia communities. The Georgia Statewide Airport Plan will propose a program for upgrading the state's airport system. Recommendations of this plan will be included in the Statewide Transportation Plan.

Rail



- State investments are critical for maintaining a viable state rail freight network for economic development. Implementing the Georgia Rail Plan will provide rural shippers with efficient, safe, reliable transportation of goods to market.

- A study of intercity rail service to examine the feasibility of high-speed, inter-city passenger rail service is underway. The results of this study will outline the feasibility of a program for implementing the State's rail passenger service.

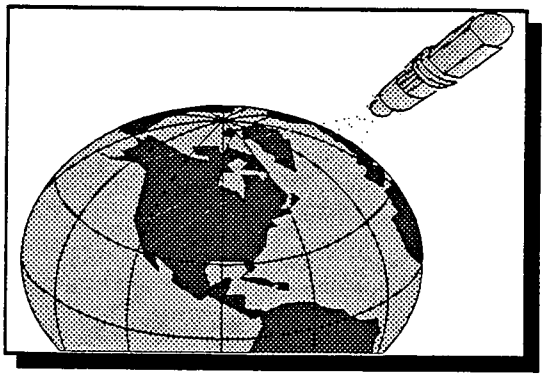
- The Georgia Commuter Rail study has evaluated rail corridors for potential passenger service. Six of the corridors studied have been recommended for development. The potential contributions of commuter rail service to the region's transportation system, underscore the need to proceed with implementing study recommendations

Bicycle and Pedestrian Ways

- Bicycle and pedestrian transportation is a developing component of the State transportation system. Bicycle and pedestrian facilities will provide additional options for energy efficient transportation

- The Georgia Statewide Bicycle Plan will provide a means for integrating bicycle and pedestrian facilitiesz into future transportation programs.

Operational Improvements



- Continued emphasis on research, development and implementation of new technologies to improve transportation system operations and safety is important. The Intelligent Transportation Systems (ITS) family of operating technologies is intended to provide vehicle and operator safety, and give rapid response to emergencies and traffic incidents.

- Efficient operations of the transportation system will need to continue exploring improvements to increase capacity and efficiency. Express Lanes on freeways, park and ride lots and other options need to be pursued.

Financing

- A comprehensive review of transportation financing and user fees is needed to determine the adequacy of present methods of financing. Transportation financing of future projects should consider innovative financing, public / private partnering, bond financing, toll road projects and other options.